Profile of the British Columbia High Technology Sector

2002 Edition

A joint project of BC STATS and the
BC Ministry of Competition, Science and Enterprise

BRITISH COLUMBIA

Profile of the British Columbia High Technology Sector

2002 Edition

A joint project of:

BC STATS

and the

Ministry of Competition, Science and Enterprise

October 2002

BRITISH COLUMBIA

http://www.bcstats.gov.bc.ca

This paper was prepared by

Dan Schrier
Lillian Hallin
Robert Blazey
and
Steve Miller

of

BC STATS

National Library of Canada Cataloguing in Publication Data
Main entry under title:
Profile of the British Columbia high technology sector. -- 2002-

Annual.
"A joint project of BC Stats, and Science, Technology and Telecommunication Division; Ministry of Competition Science and Enterprise. "
Continues: The British Columbia high technology sector, ISSN 1206-9191
ISSN 1488-4216 = Profile of the British Columbia high technology sector

1. High technology industries - British Columbia - Statistics - Periodicals. 2. High technology industries - Economic aspects - British Columbia - Statistics - Periodicals. I. BC Stats. II. British Columbia, Science, Technology and Telecommunication Division; Ministry of Competition Science and Enterprise. III. Title: British Columbia high technology sector. IV. Title: BC high technology sector.

HC79.H53L38 338.4'76213'09711021 C99-960240-3

Table of Contents

1	Highlights	iii
2	Introduction	1
3	Profile and Trends I The High Technology Sector's Contribution to the BC Economy	5
4	Profile and Trends II International Trade in High Technology Goods and Services	21
5	Detailed Tables I The High Technology Sector's Contribution to the BC Economy	29
6	Detailed Tables II International Trade in High Technology Goods and Services	57
7	Appendix A: Defining the High Technology Sector	87
8	Appendix B: Defining High Technology Commodities	89

1 Highlights

High tech shrank in 2001

The high tech sector declined in 2001 as high tech manufacturers in the province were affected by a global downturn.

High tech GDP down 4.0% to $3.3 billion...

In 2001, constant dollar GDP generated by the high technology sector was $3.3 billion, down 4.0% from 2000. The national decline was 1.2%.

...less than overall BC growth

The BC economy inched up just 0.7% in 2001 to $113.8 billion[1].

In 2001 the high tech sector generated 2.9% of the province's GDP.

Services continued to expand

High tech services continued to grow (+5.1%) for the fifth straight year despite the loss in manufacturing (-18.6%).

Employment up 5.2% to 45,550

High tech sector employment jumped 5.2% to 45,550 in 2001. Employment in all industries[2] grew only 1.4% (to 1,595,750).

$2.3 billion in wages & salaries

In 2001, workers in the high tech sector earned $2.3 billion, an increase of 4.9% over 2000. More than half ($1.4 billion) was in the computer and engineering service industries.

Over 5,400 high tech establishments

There were 5,452 establishments with employees in the industries of the high tech sector in 2001, up by 61 from 2000. Computer and engineering services are the largest single industry in the sector, with 4,367 establishments.

High tech exports: $979 million

Exports of high tech commodities from BC fell to $979 million in 2001, down 13.6% from 2000. This was the first year of decline since 1994.

High tech imports decreased 6.8%

High tech commodities destined for use in BC fell 6.8% to $5.4 billion in 2001. This was the first decline in the past decade and was over five times the value of high tech commodities that were exported.

Revenues fell to $6 billion, down 3.7% since 2000

High tech sector revenues also slipped in 2001. Manufacturing (-19.7%) led the decline while services increased (+7.6%) to partially offset this loss.

[1] GDP at basic prices.
[2] Excluding self-employed workers, and workers in commercial fishing and agriculture.

2 Introduction

The BC high technology sector

This Profile of the High Technology Sector is part of an ongoing project to monitor the growth and evolution of the high technology sector in British Columbia. The technological advancements of humanity in the last two hundred years (or even the last twenty years) have dramatically altered almost every aspect of the world economy and culture. The role of technology in the economy is clearly a vital area for study. This publication advances that study by evaluating the economic contribution of firms that produce high technology goods and services in British Columbia. This covers the GDP, revenue, employment, exports, etc. generated by firms in selected high technology industries.

The designation of a high technology sector among the other industrial sectors of the economy provides a very useful analytic tool. This is based on the premise that high technology firms behave in a way that allows them to be understood as a group, and that programs or policies can be tailored to their needs.

The sector definition has changed

Since the inception of the Profile reports in 1996, the statistics on the high technology sector have been built up from information about sub-industries, mostly obtained from Statistics Canada. These sub-industries, such as Aerospace or Engineering Services, are categories developed and maintained by Statistics Canada. The categories can become out of date, and are revised approximately every ten years. The data collection system is then converted to the new categories, a process that takes several years.

The latest system of categories (NAICS – the North American Industry Classification System) was developed in 1997. BC Stats has been able to use data compiled under this classification system this year, and many of the series previously used under the former system (Standard Industrial Classification 1980) have been discontinued.

The adoption of NAICS-based industry definitions made it necessary to revisit the definition on which the high-tech estimates were based, as many of the industry groupings previously used were no longer available. During 2001, BC STATS developed a new definition of the high technology sector that was based on NAICS industry categories. The process of developing the criteria for including or excluding specific industries in the definition is described in detail in a paper that can be found on the BC STATS website at www.bcstats.gov.bc.ca/releases/info2001/in0138.pdf.

The definition originally chosen (based on the theoretical considerations described in the above-named paper) proved to be only a starting point, as much of the information required to compile high technology statistics was not available at the required level of detail. A working definition, based on availability of data, was adopted in order to prepare the estimates presented in this paper.

The following table shows the sector components that have been used in constructing the current report. The table lists the industries that are defined, for the purpose of the present report, to constitute the high technology sector in British Columbia.

Industries in the High Technology Sector

NAICS	Industry
Manufacturing	
325189	Other Inorganic Chemicals
325410	Pharmaceutical and Medicine
333310	Commercial and Service Industry
334110	Computer and Peripheral
334210	Telephone Apparatus
334220	Radio, Television Broadcasting & Wireless Communications Equipment
334290	Other Communications Equipment
334310	Audio and Video Equipment
334410	Semiconductor and Other Electronic Components
334511	Navigational and Guidance Instruments
334512	Measuring, Medical and Controlling Devices
334610	Manufacturing and Reproducing Magnetic and Optical Media
335315	Switchgear and Switchboard, and Relay and Industrial Control Apparatus
335910	Battery
335920	Communication and Energy Wire and Cable
335990	All Other Electrical Equipment and Component
336410	Aerospace Products and Parts
339110	Medical Equipment and Supplies
Service Industries	
511210	Software Publishers
514210	Data Processing
541330	Engineering
541510	Computer Systems Design and Related

Note:
For the purposes of this report, the manufacturing NAICS industries are grouped together as "Manufacturing." Within this, details are reported for Pharmaceuticals and Aerospace, with the remaining industries covered under "other." Services are similarly grouped, with detail for "Information services" (NAICS 511210 plus 514210) and "Computer and engineering services" (NAICS 541330 plus 541510).

The report continues to include the latest information available at the time of publication for each of the variables covered. All data in this report refer to the calendar year 2001 except exports of high technology services which are only available to 2000.

Readers should note that graphs and text in this publication only deal with the highlights of the information that has been collected. The data tables in the final sections contain additional detail that can prove valuable. These tables extend from as far back as 1991 (or as far as NAICS data series were available).

"Input Indicators of the BC High Technology Sector, 2001"

In addition to updating and developing this "Profile", BC Stats has developed other measures of the high technology sector. The high technology sector, and the infrastructure network that surrounds it, is a complex system with many players and interactions. The "Indicators" report provides measures of the inputs to the high technology sector and the overall climate of innovation. It covers thirty-two separate types of activity with respect to high technology in the educational, business, government, external, and labour sectors for the years as far back as 1990. Whenever possible, the indicators are presented in comparison to other provinces, which serve as benchmarks for the situation in our own province.

3 Profile and Trends I
The High Technology Sector's Contribution to the BC Economy

Two types of industries

Throughout this report, two types of industries within the high tech sector are discussed. These are service and manufacturing industries.

The high tech service industries–computer and engineering services, and information services–do not make a tangible good. Instead they provide expertise, such as software creation, information technology system management, the planning and design of a bridge, or the analysis of a blood sample for a medical diagnosis.

The manufacturing industries are those that take raw materials, or the products made by other manufacturing industries, and make new products. High technology firms include aircraft construction (which includes aerospace manufacturing), computer and related products, pharmaceutical, and other types of manufacturing.

The place of the high technology sector in the BC economy

In terms of growth, the high technology sector has outpaced the BC economy as a whole over the past decade.

BC's high technology sector has expanded more than twice as fast (on average) as the economy as a whole over the past decade. However, the sector remains a small part of the whole economy. In 2001, high technology industries generated three percent of provincial GDP and employment, and accounted for four percent of wages and salaries. Four percent of all business establishments in the province were in the high technology sector. These proportions may seem relatively insubstantial, but BC is maturing into a diverse economy where no single industry dominates economic activity. Sectors of similar size to the high technology sector include the agriculture and related industries and accommodation and food services. The financial, insurance and real estate and leasing sector[1] generates the greatest contribution, with 12.1% of total GDP.

The general structure of BC's high technology sector

The high technology sector in BC is made up of many individual industries that can be categorized as either a manufacturing or a service-providing industry. In British Columbia, service industries dominate every measure of high technology, from GDP to employment. By the measures presented in this report, these industries account for between sixty and eighty percent of the sector.

[1] Excluding owner-occupied dwellings.

Constant dollar GDP

GDP is a measure of value added, which is essentially the difference between the cost of the material inputs used to create a product or service and the price at which it is sold. Therefore, GDP includes wages and profits, which makes it an excellent measure of the contribution of an industry to the total value of production in the economy.

Two ways of reporting GDP are in current and constant dollars. Constant dollar GDP is the best measure for understanding/illustrating trends over time.

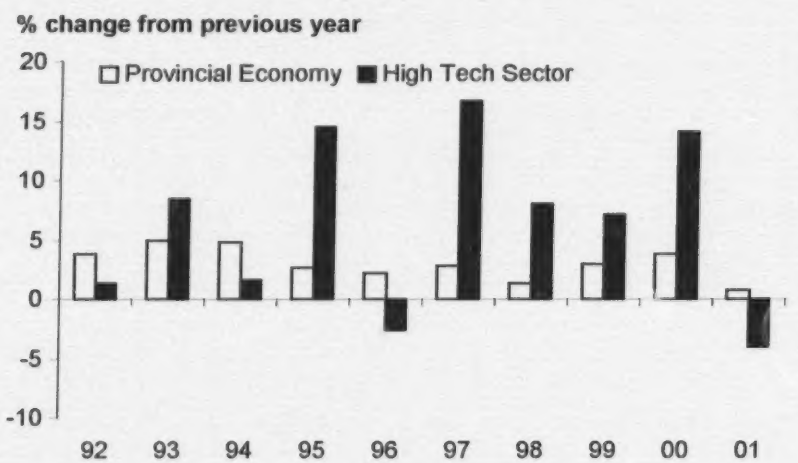
The "constant dollar" expression means that the GDP values have been corrected for the impact of price changes (i.e., inflation and deflation). Reporting data in constant dollars is one way of showing the change in the output of an industry. For example, if a high technology manufacturing firm sells the same number of widgets from one year to the next, the outputs have not increased and thus, all else being equal, the **constant** dollar GDP would not change. But if that firm charged an extra 2% for each widget sold in the second year, its **current** dollar GDP would increase by 2%.

Thus constant dollar GDP tells us the real change in output. This is why constant dollar GDP is sometimes referred to as "real GDP."

High technology sector GDP lags behind rest of economy

High technology sector GDP fell to $3.3 billion (in 1997 constant dollars) in 2001, declining (-4.0%) for the first time since 1996. BC's economy also slowed in 2001, with real GDP expanding just 0.7%, well below the ten year average annual growth rate[2] (2.9%). During the last ten years, the high technology sector grew at an annual average rate of 6.3%, more than the two times the provincial average. As a result, high technology now accounts for 2.9% of BC's GDP, up from 2.1% in 1991.

High technology GDP growth outperforms BC economy on average over the past decade



[2] Compound average

Although the service industries dominate the high technology sector in terms of size, it has been the manufacturers that have provided much of the impetus for growth in the last decade. The manufacturing industries' average annual GDP growth rate was 11.7% over the last ten years, compared to 4.5% for high technology service industries over the same period. Consequently, the manufacturing industries have increased their share of high tech GDP from 20% in 1991 to 33% in 2001. The manufacturing high technology industry declined (-18.6%) in 2001 but services continued to grow (+5.1%).

Growth of high tech manufacturing has outpaced that of services over the last decade.

BC GDP (constant 1997 dollars), 2001

	$ million	% change
High technology manufacturing	1,078	-18.6
High technology services	2,224	5.1
High technology sector: total	**3,302**	**-4.0**
BC total	**113,849**	**0.7**

BC's high technology services sector grew 5.1% in 2001, offsetting a downturn (-18.6%) in manufacturing..

It is impossible to say that high technology is the fastest growing sector in the economy due to the variety of definitions of "sectors," but it can safely be said that the high technology sector has been close to the top in GDP growth for most of the decade. Through this period, the next fastest growing major sector was information and cultural services (+6.4% annual average), which does include some high technology industries.

Most sectors of the economy outperformed high technology industries in 2001. Overall, the BC goods producing industries (including primary industries) were down 3.9%, while the service industries increased 2.4%.

BC's constant dollar GDP growth behind national rate

BC's high technology GDP performance in 2001 (-4.0%) was less than the other provinces despite a negative national rate. Canadian high tech GDP, in constant dollars, declined 1.2% to $46.5 billion. Both Ontario (-2.2%) and Quebec (-0.9%) recorded declines. At $21.4 billion, Ontario was responsible for almost half the Canadian high technology GDP. Alberta's high tech sector was the only one that grew in 2001 (+10.2%), maintaining its lead in average annual growth over the past decade.

BC's high technology GDP growth lags behind the national average.

High Tech GDP (constant 1997 dollars), 2001

	$ million	% change
British Columbia	3,302	-4.0
Alberta	3,804	10.2
Ontario	21,392	-2.2
Quebec	15,161	-0.9
Canada	**46,482**	**-1.2**

High technology services grew in all provinces, and manufacturing declined. This is very different from 2000 where not only did the high technology industry expand in both industries for each province, but growth in manufacturing outpaced growth in services in all provinces as well. Ontario and BC faced the steepest drops in manufacturing in 2001 (-13.9% and -18.6% respectively), while Quebec (-3.7%) saw the mildest. Alberta has had the fastest developing services sector over the past decade (11.7% annual average), and despite having the worst growth in manufacturing in 2001, BC is still the leading province in growth in that industry over the decade (11.7%).

Current dollar GDP

Like its constant dollar counterpart, current dollar GDP is a measure of value added, which is essentially the difference between the cost of the material inputs and services used to create a product or service, and the price at which it is sold. The difference is that current dollar GDP leaves in the impact of inflation. During periods of rapid price change, which some high technology industries have experienced, price effects can mask changes in the volume of output. However, current dollar GDP has the advantage of showing the buying and investing power of incomes in the industry.

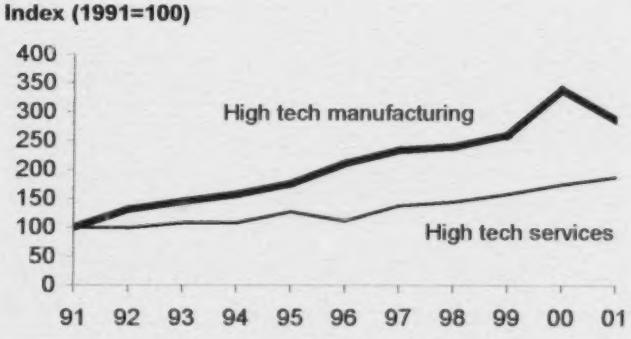
Current dollar GDP continues to rise

National high tech GDP (current dollars) fell for the first time in the last 10 years.

High technology GDP measured in current dollars inched up 0.4% in 2001, to $3.4 billion. By comparison, the overall BC GDP grew 1.7%. This was the first year since 1996 where the high technology sector has not performed as well as the overall BC economy when viewed with the impact of inflation included (i.e., in current dollars).

BC's service sector expanded, rising 7.6% to $2.5 billion, but was still far below the national average (14.2%). The manufacturing industries experienced a substantial decrease, falling 15.4% to just $0.9 billion. Over the long-term, output from the manufacturing industries has been growing at a much faster rate compared to the service sector. High tech GDP for service industries grew 87.1% from 1991 to 2001, but for the manufacturing industries, it almost tripled. As a result, the manufacturing sector has increased its share of total high tech GDP from 19.1% in 1991 to 26.4% in 2001.

Manufacturing gaining share of high tech GDP



In the service sector, almost all of the growth over the last decade has been due to the GDP of "Computer and engineering services" nearly doubling between 1991 and 2001. By contrast, the output of the "Information services" industry increased 46.3% from 1991 to 2001, and consequently its share of service sector GDP dropped from 21% to 16%.

Information services GDP has remained fairly constant while computer and engineering services GDP has soared in the last decade.

BC current dollar GDP grows faster than national rate

In 2001, the Canadian high technology sector's GDP was 1.4% lower than it was in 2000, falling to $49.1 billion. Alberta (+7.6%), BC (+0.4%) and Ontario (+0.8%) all surpassed the national average (-1.4%). Quebec suffered a decline of 6.7%. Alberta's relatively high growth was a significant rebound from 2000, when its high technology sector GDP grew the least, only 9.7% compared to the national average of 17.9%.

The manufacturing industries declined fairly consistently throughout the country. Alberta saw the sharpest drop (-15.6%) while Quebec suffered the least (-12.2%) of the four biggest provinces. The service industry performed more sporadically across the nation. Alberta also witnessed the most extreme change (+21.0%), while BC (+7.6%) and Quebec (+9.4%) had the lowest increases. Alberta boasts the best annual average growth rates in both the service (+13.7%) and manufacturing (+11.7%) industries of its high technology sector over the last ten years. Ontario's manufacturing sector has performed the worst overall growing at just 3.7% per year on average, while BC had the worst service industry performance (+6.5%).

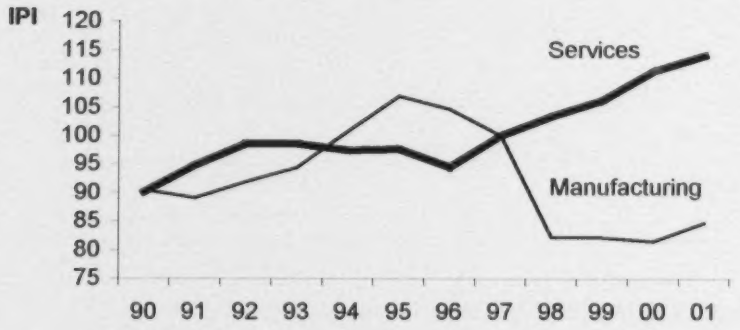
Price changes: comparing current and constant dollar GDP

Comparing the constant and current dollar measures reveals the effect of price changes on the value of an industry's outputs and inputs. In the high tech sector this is particularly important, since some industries have experienced price deflation in recent years as rapid change in technology has driven prices down (for example, the price of personal computers has fallen substantially even though they are now more powerful than they used to be).

There was inflation in the high tech sector in 2001

The growth rate of current dollar high tech GDP was 4.4 percentage points higher than that of the constant dollar figure, which indicates that for the sector as a whole there was inflationary pressure.

Both manufacturing and service industries experienced some inflation



Note: IPI is the GDP implicit price index

Employment in the high tech sector

The measure of employment used in this report is based on Statistics Canada's Survey of Employment, Payroll and Hours (SEPH). This employer survey provides a wealth of detail about employment, wages, and hours in a large number of industries. However, because it is an employer survey, the SEPH data does not include self-employed workers, and workers in commercial fishing, agriculture, and some services.

The data from SEPH give the average number of workers in an industry through the course of the year. If an industry is highly seasonal, the peak number of workers is offset by those months where there are fewer workers. A full-time worker is accorded equal status with a part-time worker; no attempt is made to measure the number of "person years" or "full time equivalents."

High technology employment continues to grow

The high tech sector was responsible for 10.5% of the total employment growth in BC.

Employment in BC's high technology sector has grown rapidly over the past decade. The year 2001 was no exception as employment grew substantially to 45,550 workers, up 5.2% from 2000. This compares to 1.4% growth for employment in all sectors

in the province.[3] The high technology sector in BC gained approximately 2,260 jobs in 2001, accounting for about one in nine net new jobs.

Employment, 2001

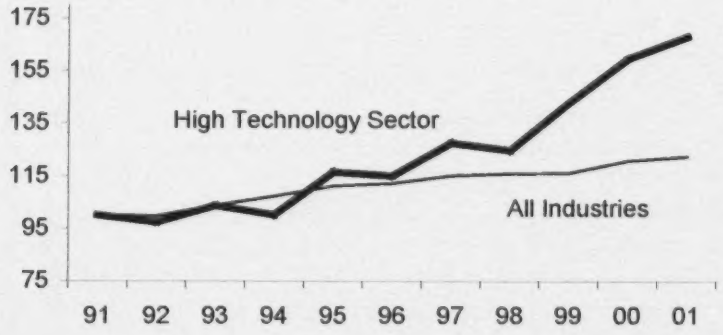
	Workers	% change
High technology manufacturing	15,730	-1.0
High technology services	29,820	8.8
High technology sector: total	**45,550**	**5.2**
BC total	**1,595,750**	**1.4**

High tech employment growth outpaced the expansion of overall employment in most years in the last decade. This long run of growth has caused the number of workers in the high technology sector to increase by almost 68% over the last ten years. The sector's growth is all the more impressive when compared to overall employment, which has increased only 22%. The high technology sector now accounts for 2.9% of all jobs, up from 2.0% in 1991.

High tech's share of total employment has increased by almost 68% since 1991.

High technology employment grew faster than total employment over the last decade

Index (1991=100)

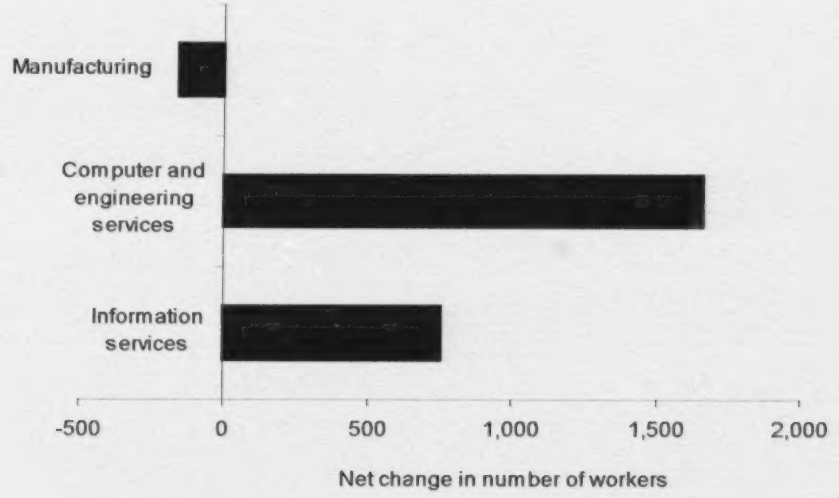


The service industries were responsible for all of the growth in high technology employment in 2001. Computer and engineering services led the way (+7.3%) adding 1,660 new employees to the high tech sector. Information services had a larger percentage increase (+16.6%) to 5,290 jobs.

Computer and engineering services account for over half of all high tech employment.

[3] This growth rate is based on Statistics Canada's Survey of Employment, Payroll and Hours. The more frequently cited Labour Force Survey (which includes self-employed workers, as well as workers in commercial fishing and agriculture) reports that for 2000, employment in BC actually fell 1.3%.

Computer and engineering services dominate high tech job creation in 2001

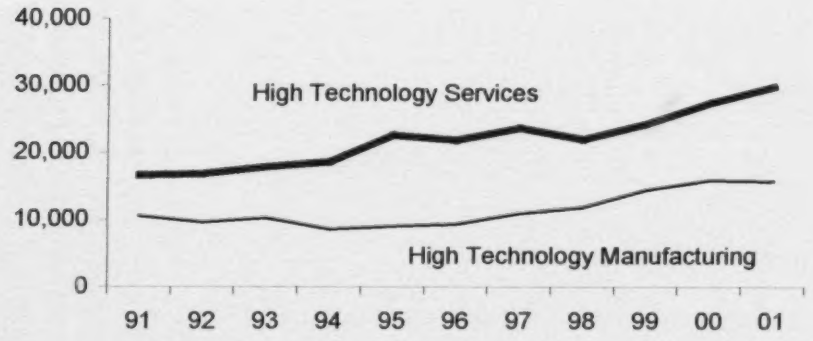


Job loss in high technology manufacturing industries was still less severe than that of the goods producing sector as a whole in 2001, falling 1.0% compared to 4.4% for goods-producing workers. Despite an increase of almost 50% of the number of people working in high tech manufacturing industries over the last decade, the service industries still dominate total employment in high technology.

Employment in the service industry has increased 79.7% over the past ten years. This jump has been due to consistent growth in the computer and engineering industry, and substantial increases in employment in the information services industry, particularly in the last three years. The number of jobs in this industry has grown over 200% since 1991, and now accounts for about 18% of employment in high technology services.

High tech manufacturing has not experienced the strong growth that high tech services has over the past decade

Employment



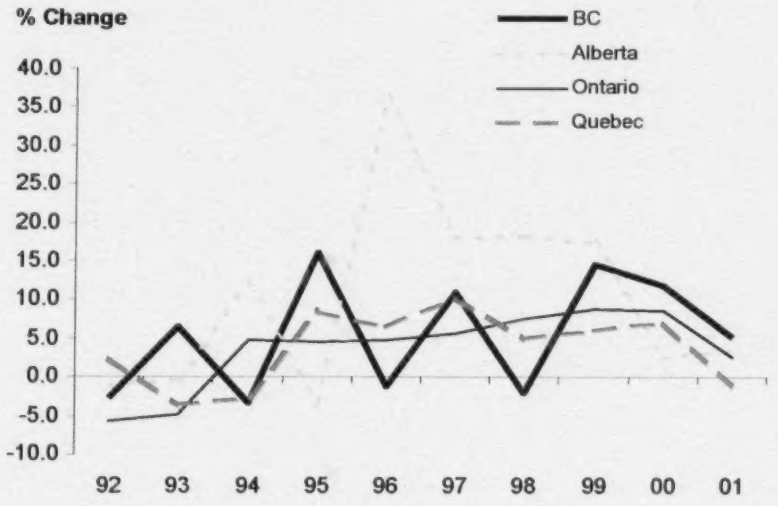
High technology employment fares best in Western Canada

British Columbia (+5.2%) and Alberta (+3.4%) experienced the highest employment growth in their respective high technology sectors in 2001. By comparison, the Canadian aggregate growth was only 2.3%. Since 1991, BC has increased its share of high tech employment in Canada by 0.8 percentage points, and Alberta has increased its share by 3.4 percentage points. For both BC and Alberta, the share of Canadian high tech employment is lower than the share of total employment. BC has 12.5% of the country's employment but only 9.4% of the high tech employment. Alberta has 9.3% of the high tech employment which is also significantly lower than the 10.7% share of overall employment both within and outside the high technology sector. Ontario and Quebec have seen their shares of the Canada total drop to 44.5% and 28.6% respectively.

BC's share of Canadian high technology employment is growing.

High tech employment growth is the steadiest in Ontario

BC and Alberta have more volatile employment growth in their high tech industries than the East.



Measuring labour productivity changes: comparing real GDP growth with employment changes

Examining the difference between constant dollar GDP growth (i.e., real changes in output) and employment gives an indication of changes in labour productivity. If real GDP growth is outpacing increases in employment, this shows that individual workers are producing more or that capital is being used more efficiently. However, what these data do not show are the extent to which the changes in productivity may be due to changes in capital or in the hours of work.

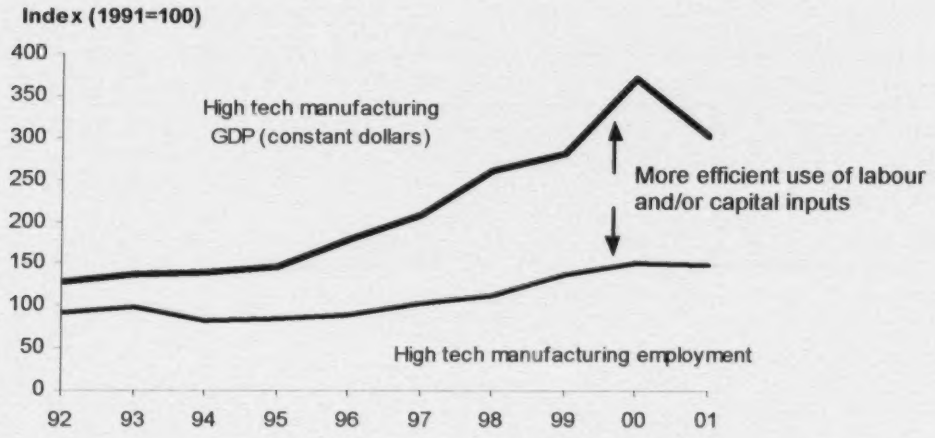
Substantial productivity growth has been achieved in high tech manufacturing during the past decade.

Productivity on the rise

From 1991 to 2001, real GDP in high technology manufacturing grew over 200%, while employment grew by about 50%. This indicates that high technology manufacturing industries have managed to substantially increase their output per worker over the last decade. In other words, high technology manufacturing industries have significantly improved their productivity since 1991.

Advances in productivity can originate in a number of areas. The capital used to produce the goods can be used more intensely, or labour can be used more efficiently. In British Columbia, many high technology manufacturing establishments are moving from a product development phase (when few goods for market are being produced) to full-scale production. Over time, we might expect to see productivity gains level off as the high technology manufacturing sector matures.

High tech manufacturing in BC has achieved significant gains in productivity



Unlike manufacturing, the service sector did not achieve productivity gains. High technology services employment jumped 79.7% from 1991 to 2001, but constant dollar GDP of services increased by only 55.6%. Computer and engineering services GDP growth (+70.2%) was slightly higher than the increase in employment (+65.1%).

In contrast, high tech services, with the exception of computer services, have experienced productivity declines.

How can the discrepancy between productivity in manufacturing versus services be explained? Foremost is the fact that the service industries are more labour intensive, and thus there is little potential for productivity gains to be made through a more efficient use of capital. Capital can easily displace workers when people are used to perform repetitive, mechanical tasks, but in the case of high technology services, the product being sold (such as engineering designs or software programs) is created using the individual intellect and knowledge of the workers.

Revenue

Revenue is the amount of money earned from the sale of goods or services by producers in an industry. It is a measure of the monetary value of an industry's goods or services, and in the manufacturing sector is measured through the value of shipments.

Revenue includes the cost of the inputs necessary to make the good or service, while GDP is the amount remaining after all costs (except labour costs) have been paid.

Manufacturing revenue falls for the first time in at least a decade

For the first time in at least a decade, revenue in the high technology sector experienced a year-over-year decline in 2001. The high technology sector earned $6.0 billion during 2001, a 3.7% drop from the previous year. As with GDP, the drops occurred in all provinces, and were due to the weaknesses in the manufacturing industry. Manufacturing revenues in BC fell 19.7% while services rose 7.6%. After a sharp drop last year, the "Information services" industry rebounded with a large increase (+15.3%) in revenues while the "Pharmaceuticals manufacturing" industry fell (-11.3%) for the second year in a row.

Wages and salaries

Wages and salaries are based on the earnings of all workers in an industry who are on the payroll, from working owners and senior executives to junior support staff. While overtime and bonus pay is included, other benefits such as medical plans, stock options, and time off in lieu of overtime are not.

Like the employment values reported earlier in this report, the wages and salaries data are calculated using source data from Statistics Canada's Survey of Employment, Payroll and Hours.

High tech wages and salaries continue to rise in 2001

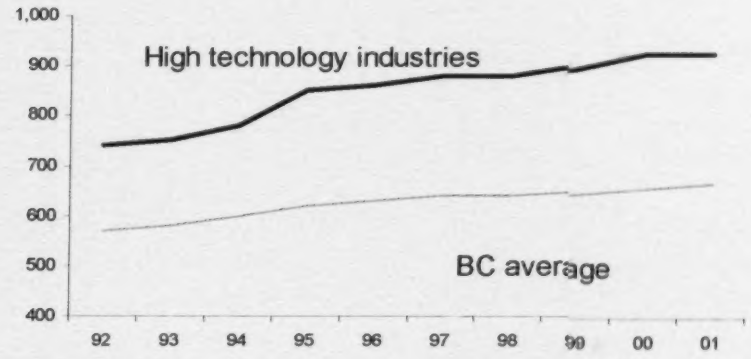
Workers in the BC high technology sector earned a total of $2.3 billion in 2001, up 3.8% from 2000. This increase was far greater that the rate of growth of wages and salaries in the province as a whole (+2.2%). The significant expansion in employment is the main driving force behind the rise in earnings, since pay scales declined slightly over the same period.

High tech service workers earn more, on average, than other service workers but high tech manufacturing workers earn less than their counterparts.

Average weekly earnings recorded a slight decrease (-0.6%) to $930 compared to 2000. This is significantly higher than the BC industrial aggregate ($670), which inched up 0.8% in 2001. The level of earnings remained substantially higher in the high technology services sector ($1,040) compared to the total service sector ($630). This is opposite to workers in high technology manufacturing who earned an average of $720 per week, while the average manufacturing worker in BC made $810. The premium for working in the high tech sector decreased slightly since 2000 from $230 to $210. The wage disparity is likely due to a combination of greater skill requirements relative to many jobs, plus the burgeoning demand for skilled high technology workers, which necessitates greater pay to both attract and retain them.

High tech industries have higher wages

Average Weekly Earnings ($)



Establishments: how many high tech businesses are there?

The high tech sector is a dynamic one, with activities in a wide range of industries. Statistics Canada's Business Register is used to count how many establishments are in each industry in the sector, how many employees they have, and where they are located.

An establishment is the smallest accounting unit within a firm that can report certain financial data. A single company may contain a number of establishments. A branch location does not always signify the existence of an establishment; for example, bank branches are not identified as individual establishments. Furthermore, to be included in the tabulations the establishment must have paid employees; owner-operator firms with no paid employees are not included.

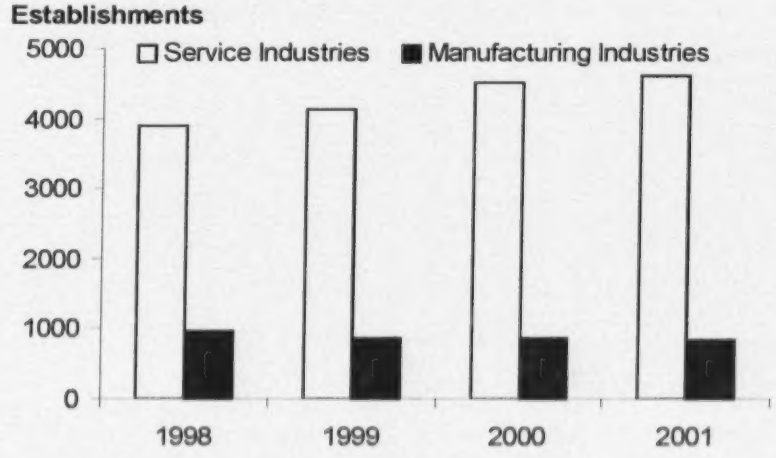
The number of high tech establishments continues to grow

There were more high technology establishments in BC in 2001 than ever before. Excluding those establishments with no employees, there were 5,452 high tech establishments, 1.1% more than in 2000. More than eight out of every ten of these were in service industries. There were 4,622 high technology service establishments, versus only 830 in the manufacturing industries. In fact, while the number of establishments in the services industry has been growing each year since 1998, the number in the manufacturing industry has been shrinking each year.

More high technology establishments in 2001 than ever before.

Service industries dominate the count of high tech establishments.

Over four-fifths of high tech establishments are in service industries



The service sector dominates in terms of the number of high technology establishments, and its share is getting larger. While the service sector added 94 establishments in 2001 (+2.1%), there were actually 33 fewer (-3.8%) in the manufacturing sector. The computer and engineering services industry made up the bulk of these new establishments with 85 additions in 2001.

Although the largest gains were smaller establishments with 1 to 4 employees (+108), there were also more establishments with 50 or more employees (+16). Most industries with between 5 and 49 workers saw a decrease in the number of establishments.

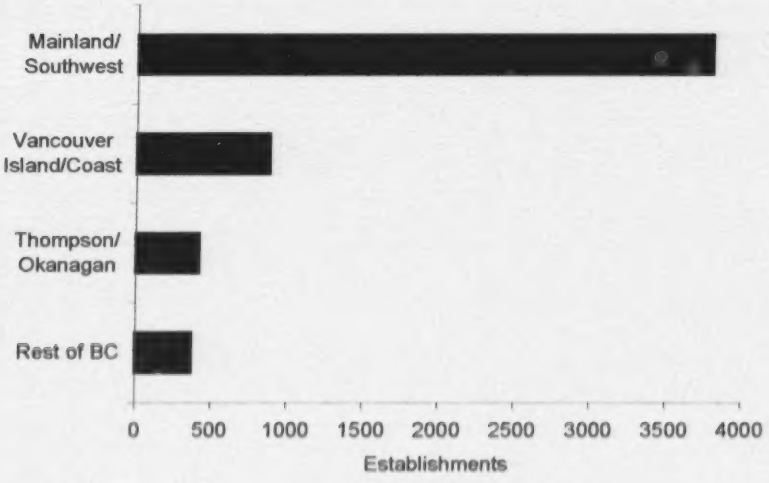
There were declines in the number of establishments in manufacturing industries with less than 50 employees, but an expansion in establishments with 50 or more employees. This is very different from the service industry where the bulk of the net increase in establishments (93%) occurred in industries with between 1 and 4 employees.

Although establishments in the manufacturing industries are heavily outnumbered by those in the service sector, they tend to have more employees. One in ten of the manufacturing establishments employed over 50 workers, while only one in twenty of the service establishments were this large. At the other end of the size scale, just over half of the high technology manufacturing establishments had between 1 and 4 workers, but two thirds of the high technology service establishments were this size.

High tech establishments are located where the people are

As one would expect, high technology establishments tend to be located in the most populous areas of the province. In 2001, two thirds of high technology establishments (3,794) were located in the Mainland/Southwest Development Region (which includes Vancouver). Most of the remainder were found in Vancouver Island/Coast (875) and Thompson/Okanagan (415).

Two-thirds of high tech establishments are in the Mainland/Southwest



Most of the growth in the high technology sector has been concentrated in the Lower Mainland as well. There were 84 new establishments (net increase) located in Greater Vancouver alone. The Capital region (which includes Greater Victoria) recorded the next largest growth, adding 19 establishments in 2001. For both these regions, all the growth occurred in the service sector, while there was actually a small decline in the number of manufacturing establishments. The Fraser Valley region added 13 high tech establishments in 2001, this time due to increases in both service and manufacturing businesses.

The location of high tech establishments mirrors the distribution of BC's population.

Self-employment

It is widely recognised that self-employment is an increasingly important factor in the BC economy. There are no particularly good measures of self-employment in the high tech sector at this point, but it is possible to arrive at a rough approximation through a tabulation of the number of establishments with no employee payroll. This approximates the number of self-employed with no employees (those with employees will be counted in the number of establishments discussed earlier). 1998 was the first full year that the number of establishments with no payroll was measured, limiting the scope of the historical data.

Note: *Care must be used in interpreting these data. It would be erroneous to add these establishment counts to the total number of high technology workers reported elsewhere in this report due to the differences in what they are measuring.*

Self-employment in the high tech sector

Some of the high technology industries, particularly computer and engineering services, are ideally suited to self-employment, where the skills, knowledge, and energy of the individual are more important than large capital investment. The data confirms this, as more than half of the businesses (6,247 of 11,699) that were deemed high technology had no paid employees. (Note that these figures *cannot* be added to the employment estimates presented earlier to arrive at a "total" employment figure for the sector.) Over nine out of every ten of the zero employee high technology establishments were in the high technology service industries. Over 56% of all workers in the computer and engineering services were self-employed in 2001. By comparison, only 35% of workers in manufacturing industries were self-employed.

Compared to the rest of the economy, the high technology industry has a larger proportion of businesses without employees. The total proportion of businesses with no employees for all industries was just over 50%, compared to 53.4% in the high technology sector.

Establishments, 2001

	Zero employees	1+ employees
High technology manufacturing	441	830
High technology services	5,806	4,622
Computer & engineering services	*5,670*	*4,367*
Information services	*136*	*255*
High technology sector: total	6,247	5,452

4 Profile and Trends II International Trade in High Technology Goods and Services

Trade in High Technology Goods

International trade is an important aspect of the high technology sector, as reflected in the high volume of two-way trade.

The domestic market for high technology goods does not have sufficient volume to achieve the economies of scale needed to remain competitive. Therefore, access to international markets is extremely important as it allows BC producers of high technology goods to focus on market niches.

At the same time, BC manufacturers do not produce enough of some types of high technology equipment to satisfy the domestic demand and as a result, large volumes of goods are imported into the province. It is interesting to note that a major consumer of high technology imports is the high technology sector itself.

High technology goods referred to in this section are based on a list developed by the U.S. Bureau of the Census and modified to fit Canadian conditions. For more information, please see Appendix B "Defining High Technology Commodities."

Exports of high technology goods fall

Exports of high tech commodities fell in 2001 after six consecutive years of increases.

Although British Columbia managed to escape most of the fallout from the dotcom implosion, the BC high technology sector did experience some setbacks in 2001. Due in part to the bumpy ride for high technology companies and partly to the overall decline in the BC economy, the value of exports of high technology commodities dropped significantly in 2001. Exports from British Columbia were valued at $978.9 million, down 13.6% from 2000. The drop in the value of international shipments of goods in the high technology sector was more severe than for overall exports, which fell 8.3%. High technology goods comprised just over three percent of all BC commodity exports.

Three commodity groups were responsible for the entire decline in exports.[1] Shipments of material design goods, which almost doubled a year earlier (+90%), fell over 60% in 2001. This yo-yo pattern of growth was mostly due to trade in optical fibres and optical fibre bundles and cables.

Computers and telecommunications exports dropped 17.7%, marking the third straight year of double-digit decline. Since peaking in 1998 at over half a billion dollars, exports of this commodity group have dropped over 43%. However, this group still ranks first in value of BC high technology exports, although its share has slipped from a peak of just under 61% in 1992 to just over 29% in 2001.

Shipments of opto-electronics were 21.1% lower compared to 2000. This was the first time in over a decade that exports of opto-electronics did not experience growth. Despite the decline, these goods still rank second in BC high tech exports.

[1] For information on high technology commodity groups, see Appendix B.

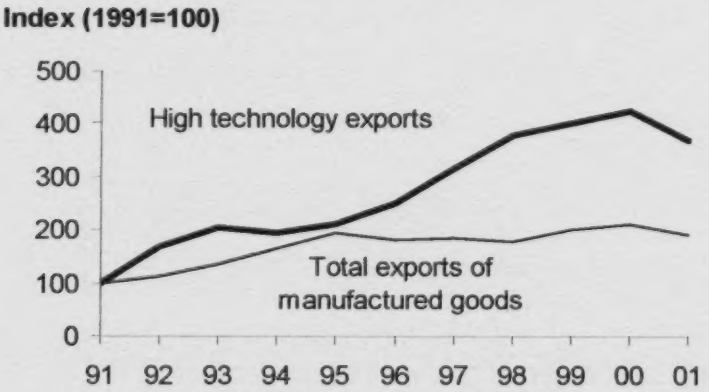
BC high technology exports by commodity group—2001

	$ million	% change
Computers and Telecommunications	286.8	-17.7
Opto-Electronics	159.4	-21.1
Computer Integrated Manufacturing	143.4	12.1
Aerospace	124.3	13.1
Life Sciences	94.6	15.5
Electronics	90.3	19.3
Material Design	71.0	-60.3
Weapons and Nuclear	7.4	12.6
Biotechnology	1.6	5.0
Total	**978.9**	**-13.6**

Exports of high technology commodities have grown faster over the past decade than exports of total manufactured commodities

Although high technology exports suffered a larger decline in 2001 compared to overall exports, over most of the last decade the pace of growth in shipments of high technology goods has appreciably exceeded that of exports of manufactured goods in total. Between 1991 and 2001, exports of high technology commodities have grown at an annual average rate[2] of 13.9%, well above that of total manufactured commodities (+6.7%). Even with the significant drop in 2001, this high rate of growth has resulted in a 267% expansion in the value of high technology exports from BC from 1991 to 2001.

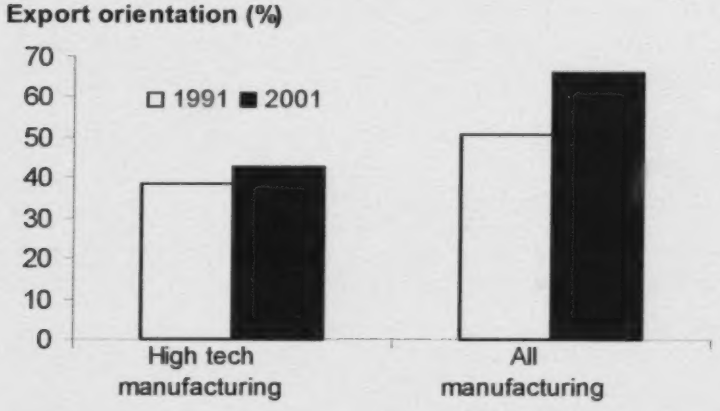
High technology goods exports have grown faster than total goods exports



[2] Compound rate.

Despite the greater rate of growth in exports of high technology goods compared to all manufactured commodities, a relatively smaller portion of their total shipments[3] are exported. Approximately 66% of all processed goods manufactured in BC were exported in 2001, compared to only 43% of high technology goods.

A smaller portion of high technology products are exported compared to total manufacturing



Manufacturers of high tech commodities export less of their outputs compared to other BC manufacturers.

United States is the destination of most BC high tech exports

The United States receives by far the largest share of BC exports of high technology goods, significantly higher than its share of total BC exports. In 2001, BC manufacturers of high technology commodities exported $763.0 million of their products to the United States, accounting for 78% of the total value of high technology exports. By comparison, 70% of BC's total goods exports were shipped to the United States. Italy leapfrogged Japan to become the second most important destination of BC produced high technology commodities in 2001, receiving just over 3% of the total value ($32.2 million). In fact, Japan slipped to fourth behind the United Kingdom ($25.4 million), with only $18.2 million in BC origin exports shipped to Japan, or just over half the value from a year earlier. Due to a one-time $13.7 million shipment of fibre optic equipment to India, that country ranked fifth in terms of BC exports, with a total of $15.7 million in high tech goods.

In 2001, BC exported almost 24 times the value of high technology goods to the US than to Italy, the next most important destination for BC high technology exports.

[3] A term used interchangeably with "revenue" elsewhere in this report.

BC high technology exports by destination—2001

	$ million	% change
USA	763.0	-19.3
European Union	96.8	38.9
Pacific Rim	72.7	-13.2
Rest of the world	46.5	40.4
Total	**978.9**	**-13.6**

Most of the decline in exports of BC produced high technology goods was due to a $183 million (-19.3%) drop in high tech shipments to the US compared to 2000. The $16.5 million (-47.6%) decrease in exports to Japan was the next most significant downturn. On the other hand, exports to the European Union were up significantly, jumping 38.9% to $96.8 million, an increase of $27.1 million. Italy (+$10.5 million) and the United Kingdom (+9.6 million) led the way.

Mode of transport

By far the majority of BC high technology exports are transported by either land or air, with only a minor percentage (6%) shipped by sea. The destination of the exports is a significant determinant of the mode of transport. Since the United States is the destination for the bulk of high tech exports and air transport is more expensive on average, land (i.e., rail or truck) is the most popular mode of transport (51%). Almost two-thirds of exports to the US travel by land, and almost all the remainder are shipped by air.

BC high technology exports by region and mode of transport—2001

Region	Mode of transport	$ millions	% of total high tech exports
United States	Land	482.1	49.3%
	Sea	1.4	0.1%
	Air	279.4	28.5%
	Total	*763.0*	*77.9%*
All other countries	Land	18.2	1.9%
	Sea	56.9	5.8%
	Air	140.8	14.4%
	Total	*215.9*	*22.1%*
Total	Land	500.3	51.1%
	Sea	58.3	6.0%
	Air	420.3	42.9%
	Total	*978.9*	*100.0%*

For all other countries excluding the US, air cargo is the most frequent mode of transport to other countries, accounting for 65% of

the total exports. Another 26% are shipped by sea, and 8% by land. [4]

High technology imports also dipped in 2001

Similar to exports, imports of high technology goods into BC also fell in 2001, dropping 6.8% from a year earlier. There were $5.4 billion dollars worth of high tech goods imported into BC in 2001, over five and a half times the value of goods exported from the province.

As with exports, computer and telecommunication goods led the way as the most important import. Over twice the value of this commodity group was imported into the province compared to second ranked aerospace goods. These two groups together comprise almost two thirds of all high technology imports into BC.

BC high technology imports by commodity group—2001

	$ million	% change
Computers and Telecommunications	2,432.8	-10.7
Aerospace	1,156.8	25.1
Life Sciences	574.8	18.1
Electronics	493.6	-40.1
Computer Integrated Manufacturing	388.0	-10.0
Opto-Electronics	200.1	-4.0
Material Design	75.8	-46.8
Biotechnology	66.3	55.3
Weapons and Nuclear	45.8	4.1
Total	**5,433.9**	**-6.8**

The United States is the source of the majority (52%) of BC imports of high tech goods, valued at over $2.8 billion in 2001. The next most significant origin of BC imports is Japan at $328 million, or about 6% of the total. Nevertheless, the distribution of imports is much more diverse than that of exports where the US is by far the single most important destination.

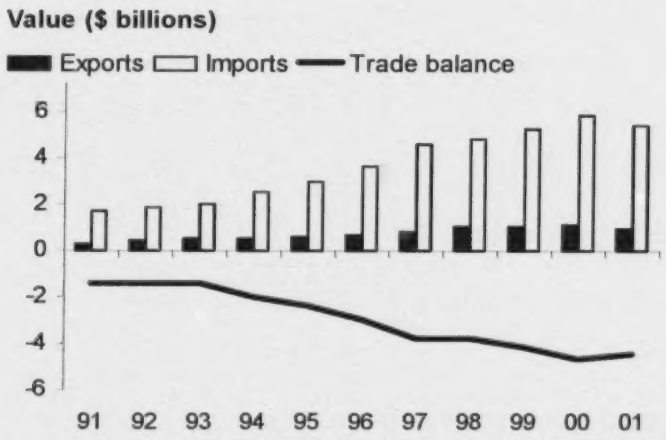
The balance of trade

BC's imports of high technology commodities are far greater than the value of exports, and as a result, the province runs a trade deficit in these goods. Although high tech exports have generally grown at a faster rate than imports over the last decade, the absolute growth in imports has exceeded that of exports, which means the trade deficit has persisted.

BC has a trade deficit in high technology goods as imports far exceed exports.

[4] The seemingly implausible shipments of products by land to overseas destinations is explained by the fact that the goods may leave BC by either truck or rail to points of departure in the United States where they are loaded onto ships or planes for the remainder of their journey.

High technology trade deficit improved slightly in 2001



BC's trade deficit in high technology commodities with the United States is more than that of the European Union and Pacific Rim countries combined.

In 2001, the trade deficit in high technology commodities actually declined, as the reduction in imports was larger than that of exports. However, the trade deficit is still almost four and a half billion dollars. Roughly half ($2.1 billion) that deficit is with the US. This is in stark contrast to commodity trade as a whole, where BC has a substantial $7.4 billion trade surplus with the US.

British Columbia's trade surplus in material design goods disappeared in 2001, such that the province now has a trade deficit in all high tech commodity groups.

BC balance of trade in high technology goods by commodity group—2001

	$ millions
Material Design	-4.8
Weapons and Nuclear	-38.3
Opto-Electronics	-40.6
Biotechnology	-64.7
Computer Integrated Manufacturing	-244.6
Electronics	-403.3
Life Sciences	-480.2
Aerospace	-1,032.5
Computers and Telecommunications	-2,146.0
Total	**-4,455.0**

Export of high technology services

Service exports are generally more difficult to measure compared to exports of goods. Some service exports take place when BC-based professionals, such as engineers or software programmers, work for a period of time outside the province. Service exports also occur when, for example, an engineering firm produces a study in its BC office for an overseas client or when a software developer creates a new program which is "shipped" on-line to a client in another country.

Why are they important?

Over the last couple of decades, worldwide trade in services has increased significantly as technical innovations have widened the scope of the service sector and advances in transportation and communications have decreased the distance between countries in an economic sense. The proliferation of e-mail, the Internet, and other forms of information technology has made it easier to conduct business with clients from around the world. Moreover, decreases in the cost of travel, and an increased number of overseas offices have made it more economical—and practical—for companies to send employees overseas to conduct business.

The analysis presented here is for 2000, the most recent year for which data are available.

Service exports continue to grow

BC's high tech service industries continue to increase their share of high tech exports.

Although there are four broad groups of service industries in the high technology sector, only two of them derive a significant part of their revenues from exports. In 2000, exports of services from computer and related services and engineering services amounted to just over one billion dollars, approximately 89% of the value of all high technology goods exports. This is compared to 1991[5] when services exports were about one third the value of goods exports.

BC high technology service exports—2000

	Revenues	Exports	
	$ million	$ million	% change
Computer services	2,533	906	32.0
Engineering services	1,146	102	-39.5
Total	**3,679**	**1,008**	**17.9**

In 2000, exports of engineering services fell for the third straight year to their lowest level since 1993. However, the growth in exports of computer services more than offset this decline, increasing by almost a third the value of a year earlier to $906 million. As a result, total service exports posted a significant increase of 18% overall.

Unfortunately more recent data on service exports is not available and these numbers are likely not reflective of the current trade in high tech services. With the failure of many internet companies over the last couple of years, it is likely that the demand for computer services has dropped off somewhat, and exports of these services from BC have probably also fallen.

[5] The first year for which services export data are available.

5 Detailed Tables I
The High Technology Sector's Contribution to the BC Economy

List of Tables

Detailed Table 1. Gross Domestic Product (GDP) (Constant Dollar) at Basic Prices by Industry, 1991-2001 30

Detailed Table 2. Gross Domestic Product (GDP) (Current Dollar) at Basic Prices by Industry, 1991-2001 32

Detailed Table 3. Gross Domestic Product (GDP) (Constant Dollar) at Basic Prices, Selected Activities, 1991-2001 34

Detailed Table 4. Gross Domestic Product (GDP) (Current Dollar) at Basic Prices, Selected Activities, 1991-2001 36

Detailed Table 5. High Technology Sector GDP (Constant Dollar) at Basic Prices, by Province, 1991-2001 38

Detailed Table 6. High Technology Sector GDP (Current Dollar) at Basic Prices, by Province, 1991-2001 40

Detailed Table 7. High Technology Sector Revenues, 1991-2001 42

Detailed Table 8. High Technology Sector Employment, 1991-2001 44

Detailed Table 9. Employment by Industry, British Columbia, 1991-2001 46

Detailed Table 10. High Technology Sector Employment, by Province, 1991-2001 48

Detailed Table 11. High Technology Sector Wages and Salaries, 1991-2001 49

Detailed Table 12. High Technology Sector Average Weekly Earnings, 1991-2001 51

Detailed Table 13. High Technology Sector Establishments, by Development Region and Regional District, 1998-2001 . 53

Detailed Table 14. High Technology Sector Establishments, by Industry, 1998-2001 54

Detailed Table 15. High Technology Sector Establishments, by Industry and Establishment Size, 2001 56

Detailed Table 1. Gross Domestic Product (GDP) (Constant Dollar) at Basic Prices[1] by Industry, 1991-2001

		Constant dollars (1997 $ million)										
NAICS	INDUSTRY	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing		**358**	**455**	**489**	**497**	**524**	**642**	**745**	**929**	**1,008**	**1,324**	**1,078**
32541	Pharmaceuticals	12	*	*	*	*	*	23	21	23	24	20
33641	Aerospace	59	64	50	55	62	89	74	80	108	133	139
	Other manufacturing	289	*	*	*	*	*	648	829	877	1,168	919
Services		**1,429**	**1,362**	**1,479**	**1,503**	**1,764**	**1,594**	**1,863**	**1,887**	**2,008**	**2,117**	**2,224**
51	Information services	356	357	459	316	338	310	289	379	390	328	365
54	Computer & engineering services	1,092	1,026	1,053	1,199	1,436	1,293	1,573	1,508	1,618	1,789	1,859
High Technology Sector Total		**1,798**	**1,821**	**1,973**	**2,005**	**2,297**	**2,236**	**2,608**	**2,817**	**3,016**	**3,441**	**3,302**
BC Industrial Aggregate		**85,133**	**88,392**	**92,697**	**97,126**	**99,624**	**101,731**	**104,569**	**105,959**	**108,986**	**113,058**	**113,849**
High Technology as a % of Total		**2.1**	**2.1**	**2.1**	**2.1**	**2.3**	**2.2**	**2.5**	**2.7**	**2.8**	**3.0**	**2.9**

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concept is that the factor cost estimate includes all subsidies and excludes all indirect taxes.

* Data has been suppressed due to confidentiality.

Source: BC STATS and Statistics Canada

Detailed Table 1 (ctd). Gross Domestic Product (GDP) (Constant Dollar) at Basic Prices[1] by Industry, 1991-2001

NAICS	INDUSTRY	% change from previous year									
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing		**27.1**	**7.5**	**1.6**	**5.4**	**22.5**	**16.0**	**24.7**	**8.5**	**31.3**	**-18.6**
32541	Pharmaceuticals	*	*	*	*	*	*	-8.7	9.5	4.3	-16.7
33641	Aerospace	8.5	-21.9	10.0	12.7	43.5	-16.9	8.1	35.0	23.1	4.5
	Other manufacturing	*	*	*	*	*	*	27.9	5.8	33.2	-21.3
Services		**-4.7**	**8.6**	**1.6**	**17.4**	**-9.6**	**16.9**	**1.3**	**6.4**	**5.4**	**5.1**
51	Information services	0.3	28.6	-31.2	7.0	-8.3	-6.8	31.1	2.9	-15.9	11.3
54	Computer & engineering services	-6.0	2.6	13.9	19.8	-10.0	21.7	-4.1	7.3	10.6	3.9
High Technology Sector Total		**1.3**	**8.3**	**1.6**	**14.6**	**-2.7**	**16.6**	**8.0**	**7.1**	**14.1**	**-4.0**
BC Industrial Aggregate		**3.8**	**4.9**	**4.8**	**2.6**	**2.1**	**2.8**	**1.3**	**2.9**	**3.7**	**0.7**

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concept is that the factor cost estimate includes all subsidies and excludes all indirect taxes.

* Data has been suppressed due to confidentiality.

Source: BC STATS and Statistics Canada

Detailed Table 2. Gross Domestic Product (GDP) (Current Dollar) at Basic Prices[1] by Industry, 1991-2001

		Current dollars ($ million)										
NAICS	INDUSTRY	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing		**319**	**418**	**462**	**501**	**560**	**672**	**745**	**765**	**829**	**1,079**	**913**
32541	Pharmaceuticals	11	*	*	*	*	*	23	23	26	27	23
33641	Aerospace	41	53	38	53	66	94	74	60	82	104	117
	Other manufacturing	267	*	*	*	*	*	648	682	721	948	773
Services		**1,355**	**1,342**	**1,456**	**1,463**	**1,722**	**1,507**	**1,863**	**1,950**	**2,132**	**2,356**	**2,535**
51	Information services	283	308	406	285	304	292	289	377	405	356	414
54	Computer & engineering services	1,071	1,034	1,050	1,178	1,418	1,215	1,573	1,573	1,728	2,000	2,122
High Technology Sector Total		**1,674**	**1,760**	**1,918**	**1,964**	**2,283**	**2,179**	**2,608**	**2,716**	**2,961**	**3,435**	**3,449**
BC Industrial Aggregate		**75,789**	**80,029**	**86,152**	**93,057**	**97,250**	**99,393**	**104,569**	**105,526**	**110,578**	**117,976**	**119,979**
High Technology as a % of Total		**2.2**	**2.2**	**2.2**	**2.1**	**2.3**	**2.2**	**2.5**	**2.6**	**2.7**	**2.9**	**2.9**

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concept is that the factor cost estimate includes all subsidies and excludes all indirect taxes.

* Data has been suppressed due to confidentiality.

Source: BC STATS and Statistics Canada

Detailed Table 2 (ctd). Gross Domestic Product (GDP) (Current Dollar) at Basic Prices[1] by Industry, 1991-2001

		% change from previous year									
NAICS	INDUSTRY	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing		**31.0**	**10.5**	**8.4**	**11.8**	**20.0**	**10.9**	**2.7**	**8.4**	**30.2**	**-15.4**
32541	Pharmaceuticals	*	*	*	*	*	*	0.0	13.0	3.8	-14.8
33641	Aerospace	29.3	-28.3	39.5	24.5	42.4	-21.3	-18.9	36.7	26.8	12.5
	Other manufacturing	*	*	*	*	*	*	5.2	5.7	31.5	-18.5
Services		**-1.0**	**8.5**	**0.5**	**17.7**	**-12.5**	**23.6**	**4.7**	**9.3**	**10.5**	**7.6**
51	Information services	8.8	31.8	-29.8	6.7	-3.9	-1.0	30.4	7.4	-12.1	16.3
54	Computer & engineering services	-3.5	1.5	12.2	20.4	-14.3	29.5	0.0	9.9	15.7	6.1
High Technology Sector Total		**5.1**	**9.0**	**2.4**	**16.2**	**-4.6**	**19.7**	**4.1**	**9.0**	**16.0**	**0.4**
BC Industrial Aggregate		**5.6**	**7.7**	**8.0**	**4.5**	**2.2**	**5.2**	**0.9**	**4.8**	**6.7**	**1.7**

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concept is that the factor cost estimate includes all subsidies and excludes all indirect taxes.

* Data has been suppressed due to confidentiality.

Source: BC STATS and Statistics Canada

Detailed Table 3. Gross Domestic Product (GDP) (Constant Dollar) at Basic Prices,[1] Selected Activities, 1991-2001

	Constant (1997 $ million)										
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Goods-producing industries	**24,680**	**25,057**	**26,039**	**26,676**	**26,992**	**26,926**	**27,806**	**27,741**	**29,207**	**30,293**	**29,102**
Agriculture and related	1,820	2,070	2,034	1,862	1,961	2,125	2,198	2,319	2,446	2,496	2,585
Fishing, trapping and related	487	451	587	519	389	353	361	285	258	246	253
Forestry and related	8,670	8,985	9,855	9,829	9,704	8,606	*	*	*	*	*
Mining and related	3,556	3,507	3,613	3,806	4,104	*	*	*	*	*	*
Other manufacturing	2,389	2,382	2,530	2,740	2,982	*	3,172	3,602	3,840	3,972	3,576
Construction	5,660	5,691	5,802	6,214	6,081	6,038	6,433	5,817	5,841	5,851	5,836
Utilities	2,355	2,303	2,161	2,159	2,208	2,432	2,468	2,474	2,511	2,633	2,434
Service-producing industries	**60,623**	**63,492**	**66,800**	**70,537**	**72,683**	**74,792**	**76,763**	**78,218**	**79,778**	**82,764**	**84,746**
Wholesale trade	3,821	4,202	4,432	4,770	4,501	4,853	4,936	5,017	5,364	5,506	5,291
Retail trade	4,584	4,857	5,219	5,394	5,704	6,003	6,054	6,143	6,257	6,469	6,759
Transportation and warehousing	5,149	5,450	5,646	6,141	6,383	6,462	6,590	6,471	6,656	6,958	6,634
Information and cultural services	2,869	2,806	3,121	3,266	3,275	3,356	3,618	3,831	4,085	4,811	5,334
Finance, insurance, real estate and leasing	18,226	19,421	20,420	21,916	22,537	23,082	23,613	24,198	24,497	25,084	25,909
Professional, scientific and technical services	2,965	2,944	3,204	3,378	3,510	3,543	4,012	4,197	4,394	4,750	4,873
Administration and support, and waste management	2,040	2,061	2,282	2,284	2,440	2,370	2,012	2,120	2,219	2,360	2,529
Education	4,118	4,205	4,388	4,513	4,909	5,361	5,406	5,450	5,472	5,571	5,718
Health care and social assistance	6,571	6,780	6,787	7,156	7,335	7,442	7,224	7,449	7,545	7,589	7,659
Arts, entertainment and recreation	841	873	893	977	1,015	1,043	1,128	1,102	1,057	1,117	1,152
Accommodation and food services	2,798	2,958	3,179	3,373	3,514	3,546	3,594	3,738	3,706	3,917	3,975
Other services	1,696	1,714	1,825	1,890	1,997	2,084	2,812	2,778	2,794	2,878	2,956
Public administration	5,162	5,344	5,511	5,608	5,634	5,649	5,764	5,725	5,733	5,756	5,957
GDP at basic prices	**85,133**	**88,392**	**92,697**	**97,126**	**99,624**	**101,731**	**104,569**	**105,959**	**108,986**	**113,058**	**113,849**

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concept is that the factor cost estimate includes all subsidies and excludes all indirect taxes. Data for the period prior to 1997 does not sum to the published total due to the inclusion of an adjusting entry. Totals are based on unrounded data.

* Data has been suppressed by Statistics Canada for reasons of confidentiality.

Source: BC STATS and Statistics Canada

Detailed Table 3 (ctd). Gross Domestic Product (GDP) (Constant Dollar) at Basic Prices,[1] Selected Activities, 1991-2001

	% change from previous year									
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Goods-producing industries	**1.5**	**3.9**	**2.4**	**1.2**	**-0.2**	**3.3**	**-0.2**	**5.3**	**3.7**	**-3.9**
Agriculture and related	13.7	-1.7	-8.5	5.3	8.4	3.4	5.5	5.5	2.0	3.5
Fishing, trapping and related	-7.3	30.0	-11.5	-25.2	-9.1	2.1	-21.1	-9.4	-4.5	2.7
Forestry and related	3.6	9.7	-0.3	-1.3	-11.3	*	*	*	*	*
Mining and related	-1.4	3.0	5.3	7.8	*	*	*	*	*	*
Other manufacturing	-0.3	6.2	8.3	8.8	*	*	13.6	6.6	3.4	-10.0
Construction	0.5	2.0	7.1	-2.1	-0.7	6.5	-9.6	0.4	0.2	-0.2
Utilities	-2.2	-6.1	-0.1	2.3	10.2	1.5	0.2	1.5	4.8	-7.6
Service-producing industries	**4.7**	**5.2**	**5.6**	**3.0**	**2.9**	**2.6**	**1.9**	**2.0**	**3.7**	**2.4**
Wholesale trade	10.0	5.5	7.6	-5.6	7.8	1.7	1.6	6.9	2.6	-3.9
Retail trade	6.0	7.5	3.3	5.7	5.3	0.8	1.5	1.8	3.4	4.5
Transportation and warehousing	5.8	3.6	8.7	4.0	1.2	2.0	-1.8	2.9	4.5	-4.7
Information and cultural services	-2.2	11.2	4.6	0.3	2.5	7.8	5.9	6.6	17.8	10.9
Finance, insurance, real estate and leasing	6.6	5.1	7.3	2.8	2.4	2.3	2.5	1.2	2.4	3.3
Professional, scientific and technical services	-0.7	8.8	5.5	3.9	0.9	13.2	4.6	4.7	8.1	2.6
Administration and support, and waste management	1.1	10.7	0.1	6.8	-2.9	-15.1	5.3	4.7	6.3	7.2
Education	2.1	4.4	2.8	8.8	9.2	0.8	0.8	0.4	1.8	2.6
Health care and social assistance	3.2	0.1	5.4	2.5	1.5	-2.9	3.1	1.3	0.6	0.9
Arts, entertainment and recreation	3.9	2.3	9.4	3.9	2.8	8.1	-2.3	-4.1	5.7	3.1
Accommodation and food services	5.7	7.5	6.1	4.2	0.9	1.4	4.0	-0.9	5.7	1.5
Other services	1.0	6.4	3.6	5.7	4.4	34.9	-1.2	0.6	3.0	2.7
Public administration	3.5	3.1	1.8	0.5	0.3	2.0	-0.7	0.1	0.4	3.5
GDP at basic prices	**3.8**	**4.9**	**4.8**	**2.6**	**2.1**	**2.8**	**1.3**	**2.9**	**3.7**	**0.7**

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concept is that the factor cost estimate includes all subsidies and excludes all indirect taxes.

* Data has been suppressed by Statistics Canada for reasons of confidentiality.

Source: BC STATS and Statistics Canada

Detailed Table 4. Gross Domestic Product (GDP) (Current Dollar) at Basic Prices,[1] Selected Activities, 1991-2001

	Current ($ million)										
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Goods-producing industries	**20,232**	**20,939**	**23,305**	**26,106**	**27,533**	**26,717**	**27,806**	**26,678**	**29,028**	**31,963**	**31,048**
Agriculture and related	1,772	1,974	1,973	1,847	1,842	1,972	2,198	2,510	2,692	2,856	3,278
Fishing, trapping and related	490	440	534	736	675	532	361	298	286	283	235
Forestry and related	4,754	5,339	7,223	8,712	9,536	8,758	*	*	*	*	*
Mining and related	3,648	2,990	3,217	3,849	4,221	*	*	*	*	*	*
Other manufacturing	1,991	2,081	2,254	2,479	2,851	*	3,172	3,328	3,615	3,714	3,280
Construction	5,525	5,974	6,223	6,562	6,356	6,058	6,433	5,993	6,187	6,393	6,627
Utilities	2,052	2,141	1,882	1,921	2,051	2,302	2,468	2,655	2,761	3,106	2,916
Service-producing industries	**55,557**	**59,090**	**62,847**	**66,951**	**69,717**	**72,676**	**76,763**	**78,848**	**81,550**	**86,012**	**88,931**
Wholesale trade	3,764	3,913	4,189	4,522	4,497	4,850	4,936	5,008	5,212	5,421	5,333
Retail trade	4,784	4,907	5,239	5,336	5,583	6,012	6,054	6,371	6,524	6,899	7,304
Transportation and warehousing	5,143	5,255	5,426	5,980	6,354	6,172	6,590	6,705	7,121	7,441	7,412
Information and cultural services	2,412	2,434	2,763	2,890	2,910	3,040	3,618	3,772	3,695	3,881	4,109
Finance, insurance, real estate and leasing	16,573	17,869	19,064	20,361	21,095	22,213	23,613	23,819	24,711	25,592	26,489
Professional, scientific and technical services	2,605	2,696	2,967	3,195	3,356	3,390	4,012	4,378	4,687	5,226	5,226
Administration and support, and waste management	1,786	1,877	2,076	2,136	2,305	2,378	2,012	2,149	2,334	2,595	2,801
Education	4,048	4,440	4,642	4,959	5,171	5,313	5,406	5,688	5,693	5,904	6,185
Health care and social assistance	5,177	5,697	5,982	6,401	6,647	7,035	7,224	7,498	7,865	8,412	8,858
Arts, entertainment and recreation	717	796	829	909	950	1,043	1,128	1,141	1,234	1,362	1,473
Accommodation and food services	2,518	2,740	2,949	3,135	3,365	3,553	3,594	3,671	3,644	3,944	4,178
Other services	1,530	1,596	1,671	1,790	1,961	2,080	2,812	2,902	2,967	3,133	3,339
Public administration	4,498	4,872	5,050	5,338	5,525	5,597	5,764	5,745	5,863	6,202	6,225
GDP at basic prices	**75,789**	**80,029**	**86,152**	**93,057**	**97,250**	**99,393**	**104,569**	**105,526**	**110,578**	**117,976**	**119,979**

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concept is that the factor cost estimate includes all subsidies and excludes all indirect taxes. Totals are calculated using unrounded data.

* Data has been suppressed by Statistics Canada for reasons of confidentiality.

Source: BC STATS and Statistics Canada

Detailed Table 4 (ctd). Gross Domestic Product (GDP) (Current Dollar) at Basic Prices,[1] Selected Activities, 1991-2001

	% change from previous year									
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Goods-producing industries	**3.5**	**11.3**	**12.0**	**5.5**	**-3.0**	**4.1**	**-4.1**	**8.8**	**10.1**	**-2.9**
Agriculture and related	11.4	-0.1	-6.4	-0.2	7.1	11.4	14.2	7.2	6.1	14.8
Fishing, trapping and related	-10.2	21.2	37.9	-8.3	-21.2	-32.2	-17.3	-4.2	-0.9	-16.9
Forestry and related	12.3	35.3	20.6	9.5	-8.2	*	*	*	*	*
Mining and related	-18.0	7.6	19.7	9.7	*	*	*	*	*	*
Other manufacturing	4.5	8.3	10.0	15.0	*	*	4.9	8.6	2.7	-11.7
Construction	8.1	4.2	5.5	-3.1	-4.7	6.2	-6.8	3.2	3.3	3.7
Utilities	4.3	-12.1	2.1	6.8	12.2	7.2	7.6	4.0	12.5	-6.1
Service-producing industries	**6.4**	**6.4**	**6.5**	**4.1**	**4.2**	**5.6**	**2.7**	**3.4**	**5.5**	**3.4**
Wholesale trade	3.9	7.0	8.0	-0.6	7.9	1.8	1.5	4.1	4.0	-1.6
Retail trade	2.6	6.8	1.8	4.6	7.7	0.7	5.2	2.4	5.7	5.9
Transportation and warehousing	2.2	3.2	10.2	6.2	-2.9	6.8	1.7	6.2	4.5	-0.4
Information and cultural services	0.9	13.5	4.6	0.7	4.5	19.0	4.3	-2.1	5.0	5.9
Finance, insurance, real estate and leasing	7.8	6.7	6.8	3.6	5.3	6.3	0.9	3.7	3.6	3.5
Professional, scientific and technical services	3.5	10.1	7.7	5.0	1.0	18.3	9.1	7.0	11.5	0.0
Administration and support, and waste management	5.1	10.6	2.9	7.9	3.2	-15.4	6.8	8.6	11.2	7.9
Education	9.7	4.6	6.8	4.3	2.7	1.8	5.2	0.1	3.7	4.8
Health care and social assistance	10.0	5.0	7.0	3.8	5.8	2.7	3.8	4.9	7.0	5.3
Arts, entertainment and recreation	11.0	4.2	9.7	4.4	9.8	8.1	1.2	8.2	10.3	8.2
Accommodation and food services	8.8	7.6	6.3	7.3	5.6	1.2	2.1	-0.7	8.2	5.9
Other services	4.3	4.7	7.1	9.6	6.0	35.2	3.2	2.2	5.6	6.6
Public administration	8.3	3.7	5.7	3.5	1.3	3.0	-0.3	2.1	5.8	0.4
GDP at basic prices	**5.6**	**7.7**	**8.0**	**4.5**	**2.2**	**5.2**	**0.9**	**4.8**	**6.7**	**1.7**

1. Industry-based GDP data are now reported at basic prices. Previously a "factor cost" method of calculation was used. The difference between the basic price and factor cost concept is that the factor cost estimate includes all subsidies and excludes all indirect taxes.

* Data has been suppressed by Statistics Canada for reasons of confidentiality.

Source: BC STATS and Statistics Canada

Detailed Table 5. High Technology GDP (Constant Dollar) at Basic Prices,[1] by Province, 1991-2001

		Constant (1997 $ million)										
Province		**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Canada	Manufacturing	13,910	14,101	14,048	14,780	16,258	16,378	18,163	19,584	22,519	27,888	25,117
	Services	8,881	8,612	9,779	10,590	11,998	12,970	14,650	15,262	18,251	19,179	21,364
	Total	22,727	22,637	23,785	25,333	28,225	29,341	32,813	34,846	40,770	47,067	46,482
British Columbia	Manufacturing	358	455	489	497	524	642	745	929	1,008	1,324	1,078
	Services	1,429	1,362	1,479	1,503	1,764	1,594	1,863	1,887	2,008	2,117	2,224
	Total	1,798	1,821	1,973	2,005	2,297	2,236	2,608	2,817	3,016	3,441	3,302
Alberta	Manufacturing	435	482	470	578	710	895	906	916	962	1,089	1,008
	Services	927	910	1,215	1,317	1,447	1,611	1,981	2,096	2,310	2,364	2,796
	Total	1,363	1,390	1,686	1,896	2,156	2,503	2,887	3,013	3,272	3,453	3,804
Ontario	Manufacturing	7,528	7,495	7,210	7,256	8,187	7,947	8,784	9,465	9,970	12,661	10,905
	Services	3,812	3,695	3,918	4,405	4,912	5,562	6,439	6,742	8,612	9,205	10,487
	Total	11,314	11,164	11,108	11,647	13,083	13,506	15,223	16,206	18,582	21,866	21,392
Quebec	Manufacturing	4,821	4,859	5,197	5,920	6,287	6,360	6,800	7,164	9,160	11,181	10,771
	Services	2,230	2,152	2,484	2,556	2,907	2,927	3,084	3,171	3,963	4,118	4,389
	Total	7,055	7,006	7,692	8,465	9,199	9,291	9,884	10,335	13,123	15,300	15,161

1. Totals are calculated using unrounded data.

Source: BC STATS and Statistics Canada

Detailed Table 5 (ctd). High Technology GDP (Constant Dollar) at Basic Prices, by Province, 1991-2001

		% change from previous year									
Province		**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Canada	Manufacturing	1.4	-0.4	5.2	10.0	0.7	10.9	7.8	15.0	23.8	-9.9
	Services	-3.0	13.6	8.3	13.3	8.1	13.0	4.2	19.6	5.1	11.4
	Total	-0.4	5.1	6.5	11.4	4.0	11.8	6.2	17.0	15.4	-1.2
British Columbia	Manufacturing	27.1	7.5	1.6	5.4	22.5	16.0	24.7	8.5	31.3	-18.6
	Services	-4.7	8.6	1.6	17.4	-9.6	16.9	1.3	6.4	5.4	5.1
	Total	1.3	8.3	1.6	14.6	-2.7	16.6	8.0	7.1	14.1	-4.0
Alberta	Manufacturing	10.8	-2.5	23.0	22.8	26.1	1.2	1.1	5.0	13.2	-7.4
	Services	-1.8	33.5	8.4	9.9	11.3	23.0	5.8	10.2	2.3	18.3
	Total	2.0	21.3	12.5	13.7	16.1	15.3	4.4	8.6	5.5	10.2
Ontario	Manufacturing	-0.4	-3.8	0.6	12.8	-2.9	10.5	7.8	5.3	27.0	-13.9
	Services	-3.1	6.0	12.4	11.5	13.2	15.8	4.7	27.7	6.9	13.9
	Total	-1.3	-0.5	4.9	12.3	3.2	12.7	6.5	14.7	17.7	-2.2
Quebec	Manufacturing	0.8	7.0	13.9	6.2	1.2	6.9	5.4	27.9	22.1	-3.7
	Services	-3.5	15.4	2.9	13.7	0.7	5.4	2.8	25.0	3.9	6.6
	Total	-0.7	9.8	10.0	8.7	1.0	6.4	4.6	27.0	16.6	-0.9

Source: BC STATS and Statistics Canada

Detailed Table 6. High Technology GDP (Current Dollar) at Basic Prices,[1] by Province, 1991-2001

		Current ($ million)										
Province		**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Canada	Manufacturing	12,875	13,230	13,791	14,454	16,068	16,441	18,163	18,909	23,353	29,018	25,372
	Services	8,451	8,489	9,573	10,245	11,672	12,895	14,650	15,387	18,907	20,787	23,733
	Total	21,326	21,719	23,363	24,700	27,741	29,336	32,813	34,296	42,260	49,806	49,105
British Columbia	Manufacturing	319	418	462	501	560	672	745	765	829	1,079	913
	Services	1,355	1,342	1,456	1,463	1,722	1,507	1,863	1,950	2,132	2,356	2,535
	Total	1,674	1,760	1,918	1,964	2,283	2,179	2,608	2,716	2,961	3,435	3,449
Alberta	Manufacturing	403	441	454	550	684	881	906	1,101	1,262	1,448	1,222
	Services	840	861	1,143	1,240	1,368	1,643	1,981	2,071	2,341	2,506	3,032
	Total	1,243	1,301	1,597	1,790	2,052	2,524	2,887	3,172	3,603	3,954	4,254
Ontario	Manufacturing	7,159	7,148	7,167	6,935	7,810	7,846	8,784	9,278	9,718	11,774	10,274
	Services	3,612	3,614	3,769	4,177	4,693	5,516	6,439	6,735	8,841	9,888	11,555
	Total	10,771	10,762	10,936	11,112	12,503	13,362	15,223	16,013	18,559	21,662	21,829
Quebec	Manufacturing	4,198	4,370	4,845	5,720	6,215	6,206	6,800	6,785	10,206	13,374	11,748
	Services	2,207	2,205	2,553	2,595	2,978	2,993	3,084	3,257	4,187	4,549	4,978
	Total	6,405	6,575	7,398	8,315	9,193	9,200	9,884	10,042	14,393	17,924	16,726

1. Totals are calculated using unrounded data.

Source: BC STATS and Statistics Canada

Detailed Table 6 (ctd). High Technology GDP (Current Dollar) at Basic Prices, by Province, 1991-2001

		% change from previous year									
Province		**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Canada	Manufacturing	2.8	4.2	4.8	11.2	2.3	10.5	4.1	23.5	24.3	-12.6
	Services	0.4	12.8	7.0	13.9	10.5	13.6	5.0	22.9	9.9	14.2
	Total	1.8	7.6	5.7	12.3	5.7	11.9	4.5	23.2	17.9	-1.4
British Columbia	Manufacturing	31.0	10.5	8.4	11.8	20.0	10.9	2.7	8.4	30.2	-15.4
	Services	-1.0	8.5	0.5	17.7	-12.5	23.6	4.7	9.3	10.5	7.6
	Total	5.1	9.0	2.4	16.2	-4.6	19.7	4.1	9.0	16.0	0.4
Alberta	Manufacturing	9.4	2.9	21.1	24.4	28.8	2.8	21.5	14.6	14.7	-15.6
	Services	2.5	32.8	8.5	10.3	20.1	20.6	4.5	13.0	7.0	21.0
	Total	4.7	22.8	12.1	14.6	23.0	14.4	9.9	13.6	9.7	7.6
Ontario	Manufacturing	-0.2	0.3	-3.2	12.6	0.5	12.0	5.6	4.7	21.2	-12.7
	Services	0.1	4.3	10.8	12.4	17.5	16.7	4.6	31.3	11.8	16.9
	Total	-0.1	1.6	1.6	12.5	6.9	13.9	5.2	15.9	16.7	0.8
Quebec	Manufacturing	4.1	10.9	18.1	8.7	-0.1	9.6	-0.2	50.4	31.0	-12.2
	Services	-0.1	15.8	1.6	14.8	0.5	3.0	5.6	28.6	8.6	9.4
	Total	2.7	12.5	12.4	10.6	0.1	7.4	1.6	43.3	24.5	-6.7

Source: BC STATS and Statistics Canada

Detailed Table 7. High Technology Sector Revenues,[1] 1991-2001

NAICS	INDUSTRY	Value ($ million) 1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing		**694**	**919**	**963**	**1,165**	**1,325**	**1,542**	**1,765**	**1,889**	**2,339**	**2,600**	**2,087**
32541	Pharmaceuticals	22	*	*	*	*	*	76	84	103	97	86
33641	Aerospace	72	102	77	101	113	196	*	*	138	154	163
	Other manufacturing	600	*	*	*	*	*	*	*	2,099	2,349	1,839
Services		**1,520**	**1,552**	**2,077**	**2,164**	**2,448**	**2,601**	**3,016**	**3,101**	**3,344**	**3,679**	**3,958**
51	Information services	319	331	663	537	519	352	328	716	731	655	755
54	Computer & engineering services	1,201	1,221	1,414	1,627	1,929	2,250	2,688	2,385	2,613	3,023	3,203
High Technology Sector Total		**2,214**	**2,471**	**3,040**	**3,329**	**3,773**	**4,143**	**4,780**	**4,990**	**5,683**	**6,278**	**6,045**

1. Note that revenues for the service industries are collected on a company rather than establishment basis. As a result, revenues for those industries represent the entire Canadian earnings of companies headquartered in British Columbia. Totals are calculated using unrounded data.

* Data has been suppressed due to confidentiality.

Source: BC STATS and Statistics Canada

Detailed Table 7 (ctd). High Technology Sector Revenues,[1] 1991-2001

NAICS	INDUSTRY	% change from previous year									
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing		**32.4**	**4.8**	**21.0**	**13.7**	**16.4**	**14.5**	**7.0**	**23.8**	**11.2**	**-19.7**
32541	Pharmaceuticals	*	*	*	*	*	*	10.5	22.6	-5.8	-11.3
33641	Aerospace	41.7	-24.5	31.2	11.9	73.5	*	*	*	11.6	5.8
	Other manufacturing	*	*	*	*	*	*	*	*	11.9	-21.7
Services		**2.1**	**33.8**	**4.2**	**13.1**	**6.3**	**16.0**	**2.8**	**7.8**	**10.0**	**7.6**
51	Information services	3.8	100.3	-19.0	-3.4	-32.2	-6.8	118.3	2.1	-10.4	15.3
54	Computer & engineering services	1.7	15.8	15.1	18.6	16.6	19.5	-11.3	9.6	15.7	6.0
High Technology Sector Total		**11.6**	**23.0**	**9.5**	**13.3**	**9.8**	**15.4**	**4.4**	**13.9**	**10.5**	**-3.7**

1. Note that revenues for the service industries are collected on a company rather than establishment basis. As a result, revenues for those industries represent the entire Canadian earnings of companies headquartered in British Columbia.

* Data has been suppressed due to confidentiality.

Source: BC STATS and Statistics Canada

Detailed Table 8. High Technology Sector Employment,[1] 1991-2001

NAICS	INDUSTRY	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing Industries		**10,530**	**9,600**	**10,260**	**8,560**	**9,000**	**9,330**	**10,940**	**11,840**	**14,440**	**15,890**	**15,730**
32541	Pharmaceuticals	510	380	350	330	440	400	540	610	670	660	680
33641	Aerospace	510	490	750	810	870	900	1,140	1,250	1,610	1,740	1,760
	Other manufacturing	9,520	8,740	9,160	7,420	7,690	8,030	9,260	9,970	12,160	13,490	13,290
Service industries		**16,590**	**16,800**	**17,860**	**18,610**	**22,560**	**21,830**	**23,640**	**21,970**	**24,270**	**27,410**	**29,820**
51	Information services	1,730	2,210	2,150	2,130	2,080	2,450	2,730	2,990	3,600	4,540	5,290
54	Computer and engineering services	14,860	14,600	15,710	16,480	20,480	19,380	20,910	18,990	20,670	22,870	24,530
High Technology Sector Total		**27,130**	**26,400**	**28,110**	**27,170**	**31,560**	**31,160**	**34,570**	**33,810**	**38,710**	**43,290**	**45,550**
BC Industrial Aggregate		**1,304,530**	**1,300,270**	**1,352,580**	**1,399,060**	**1,448,410**	**1,462,760**	**1,499,680**	**1,511,200**	**1,513,930**	**1,574,300**	**1,595,750**

1. Totals are calculated using unrounded data.

Source: BC STATS and Statistics Canada

Detailed Table 8 (ctd). High Technology Sector Employment, 1991-2001

NAICS	INDUSTRY	% change from previous year									
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing Industries		-8.8	6.8	-16.5	5.1	3.7	17.2	8.2	22.0	10.0	-1.0
32541	Pharmaceuticals	-24.7	-7.6	-5.7	32.5	-9.3	35.3	13.7	8.8	-1.9	3.1
33641	Aerospace	-4.5	53.6	8.6	7.4	3.3	26.0	10.0	29.0	8.2	1.1
	Other manufacturing	-8.2	4.8	-19.0	3.7	4.5	15.3	7.7	21.9	10.9	-1.5
Service Industries		1.3	6.3	4.2	21.2	-3.2	8.3	-7.0	10.5	12.9	8.8
51	Information services	27.5	-2.7	-0.7	-2.4	17.6	11.5	9.4	20.7	26.0	16.6
54	Computer and engineering services	-1.8	7.6	4.9	24.3	-5.3	7.8	-9.2	8.8	10.6	7.3
High Technology Sector Total		-2.7	6.5	-3.3	16.2	-1.3	10.9	-2.2	14.5	11.8	5.2
BC Industrial Aggregate		-0.3	4.0	3.4	3.5	1.0	2.5	0.8	0.2	4.0	1.4

Source: BC STATS and Statistics Canada

Detailed Table 9. Employment by Industry,[1] British Columbia, 1991-2001

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Goods Producing Industries	**292.8**	**286.2**	**290.3**	**302.5**	**299.0**	**298.8**	**308.6**	**301.3**	**301.9**	**314.8**	**300.8**
Agriculture and Related	na	na	na	na	na	na	na	na	na	na	na
Agriculture	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
Food	*21.5*	*21.2*	*20.6*	*22.1*	*19.7*	*21.5*	*22.5*	*22.6*	*20.9*	*22.0*	*23.2*
Fishing and Related	na	na	na	na	na	na	na	na	na	na	na
Forestry and Related	82.0	76.8	77.5	83.0	80.5	81.2	79.4	73.6	76.8	80.5	70.7
Logging and Forestry	*18.0*	*17.3*	*18.2*	*19.6*	*19.8*	*20.1*	*19.7*	*17.6*	*17.8*	*18.3*	*18.1*
Paper and Allied Products	*23.3*	*20.8*	*21.0*	*20.3*	*20.3*	*18.5*	*16.6*	*16.6*	*17.8*	*18.8*	*15.0*
Wood Manufacturing	*40.6*	*38.7*	*38.3*	*43.1*	*40.4*	*42.6*	*43.1*	*39.4*	*41.2*	*43.4*	*37.6*
Mining and Oil and Gas Extraction	16.1	12.7	10.5	12.3	13.1	11.9	12.8	13.0	10.7	10.6	10.5
Other Manufacturing	74.0	73.4	78.5	80.1	77.9	77.2	82.2	86.7	92.1	98.4	96.1
Construction	71.3	74.7	74.7	74.1	74.8	76.7	80.0	77.2	72.6	74.3	73.7
Utilities	7.6	8.0	8.8	9.0	8.3	8.6	8.6	8.4	9.1	9.4	9.2
Service Producing Industries	**1,011.8**	**1,014.1**	**1,062.2**	**1,093.1**	**1,145.8**	**1,160.7**	**1,186.0**	**1,200.7**	**1,202.0**	**1,252.9**	**1,287.6**
Transportation and Warehousing	82.2	74.3	78.9	84.9	86.7	82.0	83.6	85.1	83.2	83.2	82.4
Retail and Wholesale Trade	239.0	232.3	240.6	240.6	252.0	252.9	255.9	257.8	258.7	271.3	281.4
Finance, Insurance and Real Estate	80.4	81.2	87.3	84.3	87.1	84.6	88.3	89.1	87.4	91.1	89.9
Educational and Related	94.8	96.2	104.1	105.1	112.6	120.5	121.5	122.2	123.6	127.7	132.8
Health and Social	126.8	130.8	129.6	144.3	150.9	154.0	155.7	162.9	167.9	174.5	178.1
Accommodation, and Food	105.5	110.0	127.8	126.2	127.4	132.1	137.3	139.0	139.3	144.8	147.2
Amusement, Gambling and Recreation	18.1	18.4	19.4	22.3	22.9	23.6	23.1	20.6	18.0	19.1	19.6
Government	52.2	51.6	52.9	52.7	51.7	49.5	48.0	48.0	47.9	47.4	47.8
BC Industrial Aggregate	**1,304.5**	**1,300.3**	**1,352.6**	**1,399.1**	**1,448.4**	**1,462.8**	**1,499.7**	**1,511.2**	**1,513.9**	**1,574.3**	**1,595.8**
High Technology Sector Total	**27.1**	**26.4**	**28.1**	**27.2**	**31.6**	**31.2**	**34.6**	**33.8**	**38.7**	**43.3**	**45.6**

1. Totals are calculated using unrounded data
na: data not available for specific industry

Source: BC STATS and Statistics Canada

Detailed Table 9 (ctd). Employment by Industry, British Columbia, 1991-2001

	% change from previous year									
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Goods Producing Industries	**-2.2**	**1.5**	**4.2**	**-1.2**	**-0.1**	**3.3**	**-2.4**	**0.2**	**4.3**	**-4.4**
Agriculture and Related	na	na	na	na	na	na	na	na	na	na
Agriculture	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
Food	*-1.1*	*-3.0*	*7.2*	*-10.8*	*9.2*	*4.6*	*0.4*	*-7.5*	*5.6*	*5.1*
Fishing and Related	na	na	na	na	na	na	na	na	na	na
Forestry and Related	-6.4	0.9	7.1	-2.9	0.8	-2.3	-7.2	4.3	4.8	-12.1
Logging and Forestry	*-4.2*	*5.2*	*7.9*	*1.2*	*1.3*	*-2.0*	*-10.6*	*0.8*	*2.9*	*-0.8*
Paper and Allied Products	*-10.9*	*0.9*	*-3.2*	*-0.1*	*-8.9*	*-10.3*	*0.1*	*7.1*	*6.0*	*-20.2*
Wood Manufacturing	*-4.7*	*-1.1*	*12.4*	*-6.1*	*5.5*	*1.0*	*-8.5*	*4.7*	*5.1*	*-13.3*
Mining and Oil and Gas Extraction	-21.1	-16.8	16.6	6.2	-9.2	7.7	1.8	-18.0	-0.4	-0.7
Other Manufacturing	-0.8	6.9	2.1	-2.8	-0.9	6.5	5.4	6.3	6.8	-2.3
Construction	4.8	-0.1	-0.8	0.9	2.6	4.4	-3.5	-5.9	2.3	-0.8
Utilities	5.0	9.7	2.2	-6.8	3.4	-0.6	-2.2	8.6	2.7	-1.8
Service Producing Industries	**0.2**	**4.7**	**2.9**	**4.8**	**1.3**	**2.2**	**1.2**	**0.1**	**4.2**	**2.8**
Transportation and Warehousing	-9.7	6.3	7.5	2.1	-5.4	2.0	1.7	-2.2	0.0	-1.0
Retail and Wholesale Trade	-2.8	3.6	0.0	4.7	0.4	1.2	0.7	0.4	4.9	3.7
Finance, Insurance and Real Estate	1.0	7.6	-3.4	3.3	-2.9	4.4	0.9	-1.9	4.2	-1.3
Educational and Related	1.5	8.3	1.0	7.1	7.0	0.8	0.6	1.1	3.3	4.0
Health and Social	3.2	-0.9	11.3	4.6	2.0	1.1	4.7	3.0	3.9	2.1
Accommodation, and Food	4.3	16.2	-1.3	1.0	3.7	3.9	1.3	0.2	4.0	1.6
Amusement, Gambling and Recreation	2.0	5.2	15.1	2.6	2.9	-1.9	-10.8	-12.7	6.1	2.5
Government	-1.2	2.6	-0.3	-1.9	-4.4	-2.9	0.0	-0.4	-1.0	0.9
BC Industrial Aggregate	**-0.3**	**4.0**	**3.4**	**3.5**	**1.0**	**2.5**	**0.8**	**0.2**	**4.0**	**1.4**
High Technology Sector Total	**-2.7**	**6.5**	**-3.3**	**16.2**	**-1.3**	**10.9**	**-2.2**	**14.5**	**11.8**	**5.2**

na: data not available for specific industry

Source: BC STATS and Statistics Canada

Detailed Table 10. High Technology Sector Employment, by Province, 1991-2001

Province	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Canada	314,620	307,860	300,440	303,460	320,850	343,620	375,390	399,380	439,000	473,330	484,170
British Columbia	27,130	26,400	28,110	27,170	31,560	31,160	34,570	33,810	38,710	43,290	45,550
Alberta	17,800	17,600	17,550	19,670	19,010	25,910	30,570	36,130	42,370	43,460	44,920
Ontario	152,030	143,410	136,570	143,160	149,770	156,900	165,520	177,860	193,420	210,050	215,390
Quebec	96,210	98,520	94,910	92,400	100,070	106,580	117,530	123,350	130,870	140,020	138,440

	% change from previous year									
Province	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Canada	-2.1	-2.4	1.0	5.7	7.1	9.2	6.4	9.9	7.8	2.3
British Columbia	-2.7	6.5	-3.3	16.2	-1.3	10.9	-2.2	14.5	11.8	5.2
Alberta	-1.1	-0.3	12.1	-3.4	36.3	18.0	18.2	17.3	2.6	3.4
Ontario	-5.7	-4.8	4.8	4.6	4.8	5.5	7.5	8.7	8.6	2.5
Quebec	2.4	-3.7	-2.6	8.3	6.5	10.3	5.0	6.1	7.0	-1.1

Source: BC STATS and Statistics Canada

Detailed Table 11. High Technology Sector Wages and Salaries,[1] 1991-2001

Value ($ million)

NAICS	INDUSTRY	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing Industries		**330.8**	**317.9**	**362.3**	**313.9**	**319.7**	**351.4**	**422.3**	**488.3**	**618.0**	**690.2**	**675.6**
32541	Pharmaceuticals	13.9	11.4	11.5	10.4	13.4	12.4	18.3	23.7	23.7	23.6	23.8
33641	Aerospace	18.0	18.4	27.7	31.3	34.8	36.7	45.9	58.1	73.3	79.1	77.1
	Other manufacturing	298.9	288.1	323.1	272.2	271.5	302.4	358.0	406.5	521.1	587.5	574.7
Service Industries		**702.0**	**737.1**	**792.7**	**825.3**	**1,116.4**	**1,094.5**	**1,228.2**	**1,140.0**	**1,293.9**	**1,511.1**	**1,609.0**
51	Information services	56.7	76.4	80.8	79.9	84.4	100.4	119.4	130.8	161.1	210.4	243.0
54	Computer and engineering services	645.3	660.7	711.9	745.4	1,031.9	994.1	1,108.8	1,009.3	1,132.8	1,300.7	1,366.1
High Technology Sector Total		**1,032.8**	**1,055.0**	**1,155.0**	**1,139.2**	**1,436.0**	**1,445.9**	**1,650.5**	**1,628.3**	**1,912.0**	**2,201.3**	**2,284.6**
BC Industrial Aggregate		**37,355.7**	**38,402.1**	**40,876.0**	**43,456.5**	**46,324.7**	**47,750.4**	**49,738.4**	**50,443.5**	**51,071.6**	**54,042.3**	**55,208.6**

1. Totals are calculated using unrounded data

Source: BC STATS and Statistics Canada

Detailed Table 11 (ctd). High Technology Sector Wages and Salaries, 1991-2001

NAICS	INDUSTRY	% change from previous year									
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing Industries		**-3.9**	**13.9**	**-13.3**	**1.8**	**9.9**	**20.2**	**15.6**	**26.6**	**11.7**	**-2.1**
32541	Pharmaceuticals	-17.9	0.7	-9.6	28.5	-7.3	48.3	29.0	-0.1	-0.3	1.0
33641	Aerospace	2.5	50.5	13.0	11.3	5.3	25.2	26.4	26.2	7.9	-2.5
	Other manufacturing	-3.6	12.1	-15.7	-0.3	11.4	18.4	13.6	28.2	12.8	-2.2
Service Industries		**5.0**	**7.5**	**4.1**	**35.3**	**-2.0**	**12.2**	**-7.2**	**13.5**	**16.8**	**6.5**
51	Information services	34.8	5.8	-1.2	5.7	18.9	18.9	9.5	23.2	30.6	15.5
54	Computer and engineering services	3.5	6.7	4.6	39.0	-3.7	11.2	-8.8	13.0	15.1	6.9
High Technology Sector Total		**2.2**	**9.5**	**-1.4**	**26.1**	**0.7**	**14.1**	**-1.3**	**17.4**	**15.1**	**3.8**
BC Industrial Aggregate		**2.8**	**6.4**	**6.3**	**6.6**	**3.1**	**4.2**	**1.4**	**1.2**	**5.8**	**2.2**

Source: BC STATS and Statistics Canada

Detailed Table 12. High Technology Sector Average Weekly Earnings,[1] 1991-2001

Dollars per employee per week (including overtime)

NAICS	INDUSTRY	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing Industries		**530**	**560**	**580**	**630**	**610**	**630**	**630**	**670**	**700**	**720**	**720**
32541	Pharmaceuticals	530	580	630	600	580	600	650	740	680	690	680
33641	Aerospace	680	730	710	740	770	780	780	890	880	870	840
	Other manufacturing											
Service Industries		**810**	**840**	**850**	**850**	**950**	**960**	**1,000**	**1,000**	**1,030**	**1,060**	**1,040**
51	Information services	630	670	720	720	780	790	840	840	860	890	880
54	Computer and engineering services	840	870	870	870	970	990	1,020	1,020	1,050	1,090	1,070
High Technology Sector Total		**700**	**740**	**750**	**780**	**850**	**860**	**880**	**880**	**900**	**930**	**930**
BC Industrial Aggregate		**550**	**570**	**580**	**600**	**620**	**630**	**640**	**640**	**650**	**660**	**670**

1. Totals are calculated using unrounded data

Source: BC STATS and Statistics Canada

Detailed Table 12 (ctd). High Technology Sector Average Weekly Earnings, 1991-2001

NAICS	INDUSTRY	% change from previous year									
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Manufacturing Industries		**4.3**	**4.1**	**8.5**	**-2.5**	**2.2**	**1.1**	**6.6**	**3.6**	**2.7**	**0.8**
32541	Pharmaceuticals	9.0	9.0	-4.2	-3.1	2.2	9.6	13.5	-8.1	1.7	-2.0
33641	Aerospace	7.4	-2.0	4.1	3.7	1.9	-0.6	15.0	-2.2	-0.3	-3.6
	Other manufacturing										
Service Industries		**3.7**	**1.2**	**-0.1**	**11.6**	**1.3**	**3.7**	**-0.2**	**2.8**	**3.4**	**-2.1**
51	Information services	5.7	8.7	-0.5	8.3	1.1	6.7	0.1	2.1	3.6	-0.9
54	Computer and engineering services	4.3	0.1	-0.2	11.4	1.8	3.4	0.2	3.1	3.8	-2.1
High Technology Sector Total		**4.9**	**2.0**	**3.8**	**9.3**	**0.9**	**2.4**	**0.1**	**2.1**	**3.4**	**-0.6**
BC Industrial Aggregate		**3.1**	**2.3**	**2.8**	**3.0**	**2.1**	**1.6**	**0.6**	**1.1**	**1.8**	**0.8**

Source: BC STATS and Statistics Canada

Detailed Table 13. High Technology Sector Establishments,[1] by Development Region and Regional District, 1998-2001

Development Region / Regional District		1998			1999			2000			2001		
		Mfg	Service	Total	Mfg	Service	Total	Mfg	Service	Total	Mfg	Service	Total
Vancouver Island/Coast		**107**	**658**	**765**	**109**	**715**	**824**	**110**	**771**	**881**	**101**	**774**	**875**
23	Alberni-Clayoquot	3	10	13	4	10	14	4	9	13	2	13	15
17	Capital	66	429	495	63	464	527	64	520	584	61	542	603
45	Central Coast	0	0	0	0	1	1	0	0	0	0	0	0
25	Comox-Strathcona	17	51	68	18	54	72	16	63	79	14	58	72
19	Cowichan Valley	3	44	47	5	56	61	9	49	58	8	42	50
43	Mount Waddington	0	6	6	0	6	6	0	6	6	0	7	7
21	Nanaimo	17	108	125	19	112	131	17	113	130	16	106	122
27	Powell River	1	10	11	0	12	12	0	11	11	0	6	6
Mainland/Southwest		**603**	**2,610**	**3,213**	**618**	**2,790**	**3,408**	**599**	**3,095**	**3,694**	**593**	**3,201**	**3,794**
09	Fraser Valley	32	73	105	32	79	111	29	88	117	32	98	130
15	Greater Vancouver	561	2,493	3,054	572	2,664	3,236	558	2,955	3,513	550	3,047	3,597
31	Squamish-Lillooet	5	26	31	8	27	35	6	31	37	5	34	39
29	Sunshine Coast	5	18	23	6	20	26	6	21	27	6	22	28
Thompson/Okanagan		**80**	**325**	**405**	**89**	**329**	**418**	**86**	**343**	**429**	**76**	**339**	**415**
35	Central Okanagan	31	124	155	42	118	160	40	137	177	38	132	170
39	Columbia-Shuswap	1	40	41	4	42	46	3	38	41	3	43	46
37	North Okanagan	17	44	61	16	43	59	18	47	65	14	48	62
07	Okanagan-Similkameen	9	34	43	10	44	54	10	35	45	8	35	43
33	Thompson-Nicola	22	83	105	17	82	99	15	86	101	13	81	94
Kootenay		**17**	**90**	**107**	**21**	**98**	**119**	**25**	**100**	**125**	**22**	**92**	**114**
03	Central Kootenay	7	43	50	8	49	57	9	52	61	9	47	56
01	East Kootenay	7	30	37	9	33	42	10	33	43	8	24	32
05	Kootenay Boundary	3	17	20	4	16	20	6	15	21	5	21	26
Cariboo		**19**	**121**	**140**	**24**	**131**	**155**	**27**	**124**	**151**	**27**	**125**	**152**
41	Cariboo	7	31	38	9	36	45	10	33	43	7	36	43
53	Fraser-Fort George	12	90	102	15	95	110	17	91	108	20	89	109
North Coast		**5**	**30**	**35**	**4**	**24**	**28**	**3**	**28**	**31**	**3**	**26**	**29**
49	Kitimat-Stikine	4	20	24	4	16	20	3	20	23	3	17	20
47	Skeena-Queen Charlotte	1	10	11	0	8	8	0	8	8	0	9	9
Nechako		**3**	**29**	**32**	**4**	**24**	**28**	**4**	**28**	**32**	**4**	**26**	**30**
51	Bulkley-Nechako	3	29	32	4	24	28	4	27	31	4	26	30
57	Stikine	-	-	-	-	-	-	-	1	1	-	-	-
Northeast		**8**	**31**	**39**	**5**	**31**	**36**	**9**	**36**	**45**	**4**	**36**	**40**
55	Peace River	8	31	39	5	31	36	8	36	44	3	36	39
59	Northern Rockies	0	0	0	0	0	0	1	0	1	1	0	1
Total		**842**	**3,899**	**4,741**	**875**	**4,146**	**5,021**	**863**	**4,528**	**5,391**	**830**	**4,622**	**5,452**

1. Establishments with zero employees are not included in these figures.
Figures do not add to totals because some establishments did not have geographic codes.

Source: BC STATS and Statistics Canada

Detailed Table 14. High Technology Sector Establishments,[1] by Industry, 1998-2001

NAICS	Industry	1998	1999	2000	2001
Manufacturing Industries		**973**	**875**	**863**	**830**
32541	Pharmaceuticals	41	47	44	35
33641	Aerospace	58	58	56	53
	Other manufacturing	874	770	763	742
Services Industries		**3,899**	**4,146**	**4,528**	**4,622**
51	Information services	206	212	246	255
54	Computer and engineering services	3,693	3,934	4,282	4,367
High Technology Sector		**4,872**	**5,021**	**5,391**	**5,452**

1. Establishments with zero employees are not included in these figures.

Source: BC STATS, Statistics Canada Business Register Division.

Detailed Table 14. (ctd.) High Technology Sector Establishments,[1] by Industry, 1998-2001

NAICS	Industry	%change from previous year 1999	2000	2001
Manufacturing Industries		**-10.1**	**-1.4**	**-3.8**
325410	Pharmaceutical and Medicine Manufacturing	14.6	-6.4	-20.5
336410	Aerospace Products and Parts Manufacturing	0.0	-3.4	-5.4
	Other Manufacturing	-11.4	-0.7	-4.1
Services Industries		**6.3**	**9.2**	**2.1**
51	Information Services	2.9	16.0	3.7
54	Computer and Engineering Services	6.5	8.8	2.0
High Technology Sector		**3.1**	**7.4**	**1.1**

1. Establishments with zero employees are not included in these figures.

Source: BC STATS, Statistics Canada Business Register Division.

Detailed Table 15. High Technology Sector Establishments, by Industry and Establishment Size, 2001

NAICS	Industry	Number of establishments, by number of employees							
		1 to 4	5 to 9	10 to 19	20 to 49	50 plus	Subtotal	None	Total
Manufacturing Industries		**435**	**123**	**94**	**94**	**84**	**830**	**441**	**1,271**
32541	Pharmaceuticals	16	2	4	8	5	35	27	62
33641	Aerospace	28	7	3	8	7	53	44	97
	Other manufacturing	391	114	87	78	72	742	370	1,112
Service Industries		**3,078**	**593**	**427**	**316**	**208**	**4,622**	**5,806**	**10,428**
51	Information services	124	31	23	40	37	255	136	391
54	Computer and engineering services	2,954	562	404	276	171	4,367	5,670	10,037
Total for sector		**3,513**	**716**	**521**	**410**	**292**	**5,452**	**6,247**	**11,699**
Total for all Industries		**92,755**	**27,109**	**18,255**	**12,153**	**7,149**	**157,421**	**158,317**	**315,738**

Source: BC STATS, Statistics Canada Business Register Division.

6 DETAILED TABLES II
International Trade in High Technology Goods and Services

List of Tables

Detailed Table 16. Shipments and Exports of BC High Technology Goods and Total Processed Goods, 1991-2001 59

Detailed Table 17. Exports of High Technology Goods, by Destination and Mode of Transportation, 1991-2001 60

Detailed Table 18. Top 25 High Technology Export Commodities, 2001 62

Detailed Table 19. Top 25 High Technology Import Commodities, 2001 63

Detailed Table 20. Exports of High Technology Goods and Total Goods, by Destination, 1991-2001 64

Detailed Table 21. Imports of High Technology, by Country of Origin, 1991-2001 66

Detailed Table 22. Balance of Trade in High Technology Goods, by Country, 1991-2001 67

Detailed Table 23. Exports of High Technology Goods, by Commodity Group, 1991-2001 68

Detailed Table 24. Imports of High Technology Goods, by Commodity Group, 1991-2001 69

Detailed Table 25. Balance of Trade in High Technology Goods, by Commodity Group, 1991-2001 70

Detailed Table 26. Exports of High Technology Goods to the United States, by Commodity Group, 1991-2001 71

Detailed Table 27. Imports of High Technology Goods from the United States, by Commodity Group, 1991-2001 72

Detailed Table 28. Balance of Trade in High Technology Goods with the United States, by Commodity Group,1991-2001 73

Detailed Table 29. Exports of High Technology Goods to the Pacific Rim, by Commodity Group, 1991-2001 74

Detailed Table 30. Imports of High Technology Goods from the Pacific Rim, by Commodity Group, 1991-2001 75

Detailed Table 31. Balance in Trade of High Technology Goods with the Pacific Rim, by Commodity Group, 1991-2001 76

Detailed Table 32. Exports of High Technology Goods to Japan, by Commodity Group, 1991-2001 77

Detailed Table 33. Imports of High Technology Goods from Japan, by Commodity Group, 1991-2001 78

Detailed Table 34. Balance of Trade in High Technology Goods with Japan, by Commodity Group, 1991-2001 79

Detailed Table 35. Exports of High Technology Goods to the Pacific Rim (excluding Japan), 1991-2001 80

Detailed Table 36. Imports of High Technology Goods from the Pacific Rim (excluding Japan), by Commodity Group, 1991-2001 81

Detailed Table 37. Balance of Trade in High Technology Goods with the Pacific Rim (excl. Japan), by Commodity Group, 1991-2001 82

Detailed Table 38. Exports of High Technology Goods to the European Union, by Commodity Group, 1991-2001 83

Detailed Table 39. Imports of High Technology Goods from the European Union, by Commodity Group, 1991-2001 84

Detailed Table 40. Balance of Trade of High Technology Goods with the European Union, by Commodity Group,1991-2001 .. 85

Detailed Table 41. Export of High Technology Services, 1991-2000 86

Detailed Table 16. Shipments and Exports of BC High Technology Goods and Total Processed Goods, 1991-2001

	Value ($ million)										
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
High Technology Goods											
Shipments[1]	694	919	963	1,165	1,325	1,542	1,765	1,889	2,339	2,896	2,301
Exports	266	446	547	519	562	663	837	1,011	1,065	1,133	979
Exports as % of Shipments	38.4	48.5	56.8	44.5	42.4	43.0	47.4	53.5	45.5	39.1	42.5
Total Processed Goods											
Shipments[1]	23,259	24,398	26,583	30,333	34,207	32,932	33,496	31,757	35,616	37,768	34,102
Exports of Processed Goods[2]	11,784	13,272	15,841	19,208	22,845	21,304	21,845	20,977	23,723	24,976	22,532
Export Orientation (%)	50.7	54.4	59.6	63.3	66.8	64.7	65.2	66.1	66.6	66.1	66.1

	% change from previous year									
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
High Technology Goods										
Shipments	26.3	-1.0	19.0	22.5	22.1	6.8	8.7	-9.5	10.9	-20.5
Exports	67.4	22.6	-5.1	8.4	17.9	26.3	20.8	5.3	6.3	-13.6
Total Processed Goods										
Shipments	4.9	9.0	14.1	12.8	-3.7	1.7	-5.2	12.2	6.0	-9.7
Exports of Processed Goods	12.6	19.4	21.3	18.9	-6.7	2.5	-4.0	13.1	5.3	-9.8

1. Shipments represent revenues from all production, sales, services and related activities in the manufacturing sector.
2. "Processed goods" excludes selected agricultural, fish, logging, mining and energy products not produced by BC manufacturing industries.

Source: BC STATS and Statistics Canada

Detailed Table 17. Exports of High Technology Goods, by Destination and Mode of Transport, 1991-2001

Destination	Mode of Transport[2]	Value ($ million)[1] 1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
United States	Land	155.9	281.6	335.0	268.3	250.8	286.3	397.7	570.3	575.4	614.8	482.1
	Sea	0.1	0.1	0.1	0.6	1.9	1.8	5.8	3.9	5.6	1.6	1.4
	Air	28.2	44.4	57.9	97.4	146.6	168.4	203.1	226.1	286.3	329.6	279.4
	Total	**184.2**	**326.1**	**393.0**	**366.3**	**399.3**	**456.7**	**606.7**	**800.2**	**867.4**	**946.0**	**763.0**
Pacific Rim (total)	Land	1.9	4.8	16.8	5.6	10.5	12.8	18.9	8.9	7.8	0.9	3.7
	Sea	8.7	16.5	21.6	19.5	10.0	17.8	18.3	15.7	10.1	19.3	29.6
	Air	30.5	43.3	50.2	62.3	80.9	103.7	105.8	92.9	81.6	63.6	39.4
	Total	**41.1**	**64.6**	**88.7**	**87.4**	**101.4**	**134.4**	**143.1**	**117.5**	**99.6**	**83.7**	**72.7**
Japan	*Land*	1.0	3.1	1.7	1.5	2.6	3.1	3.0	0.1	0.7	0.2	1.0
	Sea	1.1	1.3	1.1	1.7	2.2	2.4	2.5	2.1	1.2	4.7	6.2
	Air	8.8	9.4	9.7	11.3	23.5	15.6	17.5	8.4	5.9	29.7	11.0
	Total	**10.9**	**13.8**	**12.5**	**14.5**	**28.3**	**21.1**	**23.1**	**10.6**	**7.9**	**34.6**	**18.2**
Pacific Rim (excluding Japan)	*Land*	0.9	1.6	15.1	4.0	8.0	9.7	15.9	8.8	7.1	0.7	2.7
	Sea	7.6	15.2	20.5	17.8	7.8	15.4	15.8	13.6	8.9	14.5	23.4
	Air	21.6	33.9	40.5	51.0	57.4	88.2	88.3	84.5	75.7	33.9	28.4
	Total	**30.2**	**50.8**	**76.2**	**72.8**	**73.1**	**113.3**	**120.0**	**106.9**	**91.7**	**49.1**	**54.5**
European Union	Land	0.3	0.2	0.3	0.6	2.6	0.7	2.5	5.9	0.5	1.6	4.1
	Sea	1.8	3.6	10.6	5.3	1.2	3.7	2.6	3.2	9.5	5.9	13.0
	Air	19.3	22.1	21.6	29.7	35.9	30.6	38.6	57.6	54.6	62.2	79.8
	Total	**21.4**	**25.9**	**32.5**	**35.6**	**39.7**	**35.0**	**43.7**	**66.7**	**64.6**	**69.7**	**96.8**
All Other Countries	Land	3.0	2.1	3.7	2.0	1.9	2.3	3.1	1.5	3.6	3.7	10.4
	Sea	1.6	8.9	12.1	5.5	3.1	6.0	20.4	3.6	4.1	7.7	14.4
	Air	15.0	18.3	16.8	22.2	17.0	28.9	20.4	21.9	25.6	21.7	21.7
	Total	**19.6**	**29.4**	**32.7**	**29.7**	**22.0**	**37.1**	**43.8**	**27.0**	**33.3**	**33.1**	**46.5**
Total	Land	161.1	288.7	355.8	276.5	265.9	302.1	422.2	586.5	587.4	621.0	500.3
	Sea	12.2	29.1	44.4	30.8	16.1	29.3	47.1	26.3	29.4	34.4	58.3
	Air	93.0	128.1	146.7	211.6	280.3	331.6	367.9	398.6	448.1	477.1	420.3
	Total	**266.4**	**446.0**	**546.9**	**518.9**	**562.3**	**663.1**	**837.2**	**1,011.4**	**1,064.9**	**1,132.5**	**978.9**

1. Totals may not equal the sum of Land Sea and Air due to the fact that some respondents did not fill in the survey completely.
2. Shipments by land to overseas markets represent the export of BC produced high technology products transshipped by US Ports such as Seattle or Portland.

Source: BC STATS and Statistics Canada

Detailed Table 17 (ctd). Exports of High Technology Goods, by Destination and Mode of Transport, 1991-2001

		% of Exports to Destination[1]										
Destination	**Mode of Transport[2]**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
United States	Land	84.6	86.4	85.2	73.2	62.8	62.7	65.6	71.3	66.3	65.0	63.2
	Sea	0.1	0.0	0.0	0.2	0.5	0.4	1.0	0.5	0.6	0.2	0.2
	Air	15.3	13.6	14.7	26.6	36.7	36.9	33.5	28.2	33.0	34.8	36.6
Pacific Rim (total)	Land	4.7	7.4	19.0	6.4	10.4	9.5	13.2	7.6	7.9	1.0	5.1
	Sea	21.2	25.6	24.4	22.3	9.8	13.2	12.8	13.4	10.2	23.0	40.7
	Air	74.1	67.0	56.6	71.3	79.8	77.2	74.0	79.1	82.0	76.0	54.2
Japan	*Land*	8.9	22.7	13.6	10.6	9.1	14.8	13.1	0.8	9.2	0.6	5.4
	Sea	10.3	9.6	8.7	11.5	7.8	11.4	10.9	19.7	15.6	13.6	34.0
	Air	80.8	67.7	77.6	77.9	83.1	73.8	76.0	79.5	75.2	85.8	60.6
Pacific Rim (excluding Japan)	*Land*	3.1	3.2	19.9	5.5	10.9	8.5	13.3	8.2	7.8	1.3	5.0
	Sea	25.2	29.9	27.0	24.4	10.6	13.6	13.2	12.7	9.7	29.6	42.9
	Air	71.6	66.8	53.2	70.0	78.5	77.9	73.6	79.0	82.5	69.0	52.1
European Union	Land	1.5	0.9	0.9	1.7	6.6	1.9	5.7	8.8	0.8	2.3	4.2
	Sea	8.2	13.8	32.6	14.8	3.0	10.7	5.9	4.8	14.7	8.5	13.4
	Air	90.2	85.3	66.5	83.5	90.4	87.4	88.4	86.4	84.5	89.2	82.4
All Other Countries	Land	15.2	64.7	11.4	6.6	8.7	6.1	7.0	5.7	10.9	11.2	22.4
	Sea	8.2	6.5	37.0	18.7	14.2	16.0	46.5	13.2	12.4	23.2	30.9
	Air	76.6	28.7	51.5	74.7	77.1	77.8	46.5	81.2	76.7	65.6	46.6
Total	Land	60.5	64.7	65.1	53.3	47.3	45.6	50.4	58.0	55.2	54.8	51.1
	Sea	4.6	6.5	8.1	5.9	2.9	4.4	5.6	2.6	2.8	3.0	6.0
	Air	34.9	28.7	26.8	40.8	49.9	50.0	43.9	39.4	42.1	42.1	42.9

1. Percentages may not add to 100 due to rounding.
2. Shipments by land to overseas markets represent the export of BC produced high technology products transshipped by US Ports such as Seattle or Portland.

Source: BC STATS and Statistics Canada

Detailed Table 18. Top 25 High Technology Export Commodities, 2001

HS Code	Commodity Description [1]	Value ($000,000)	% Total Exports
880330	Aircraft parts, nes	90.3	9.2
901380	Optical devices, appliances and instruments, nes	84.6	8.6
900110	Optical fibres, optical fibre bundles & cables, other than those of heading 85.44	67.7	6.9
853710	Boards, panels, including numerical control panels, for a voltage <= 1,000 V	62.9	6.4
852520	Transmission apparatus, for radio-teleph incorporating reception apparatus	51.2	5.2
903289	Automatic regulating or controlling instruments and apparatus, nes	47.5	4.9
847989	Machines & mechanical appliances, nes, having individual functions	46.1	4.7
847330	Parts and accessories of automatic data processing machines & units thereof	39.0	4.0
901819	Electro-diagnostic apparatus, nes	36.3	3.7
852530	Television cameras	32.5	3.3
901910	Mechano-therapy appl; massage app; psychological aptitude-testing apparatus	28.4	2.9
852510	Transmission apparatus for radio-teleph radio-broadcasting or television	24.4	2.5
847990	Parts of machines & mechanical appliances, nes, having individual functions	23.3	2.4
852431	Recorded discs for laser reading systems for reproducing phenomena o/t sound or image	21.0	2.1
284440	Radio active elements & isotopes nes, their mixtures & compounds thereof	14.8	1.5
901480	Navigational instruments and appliances, nes	14.0	1.4
852990	Parts suitable for use solely or princ with the app of headings 85.25 to 85.28 [2]	13.6	1.4
854213	Monolithic digital integrated circuit, metal oxide semiconductors (MOS technology)	13.4	1.4
901720	Drawing, marking-out or mathematical calculating instruments, nes	12.3	1.3
854140	Photosensitive semiconductor devices, photovoltaic cells & light emit diodes	12.3	1.3
851730	Telephonic or telegraphic switching apparatus	11.7	1.2
903149	Optical instruments and appliances, nes	11.3	1.2
847160	Input or output units, whether or not containing storage units in the same housing	10.9	1.1
852499	Recorded media for reproducing sound or image, nes	10.8	1.1
842489	Mech appl (whether or not hand-op) for proj/disp or spraying liq or powders, nes	10.4	1.1
Subtotal		**790.7**	**80.8**
	All Other High Technology Commodities	188.3	19.2
Total		**978.9**	**100.0**

HS code = Harmonized System commodity code; NES = Not Elsewhere Specified

1. Commodity descriptions are drawn from the approved Harmonized System coding manual. They contain numerous abbreviations that have been left in original form in this table.
2. Refers to broadcasting and radar transmission and receiving equipment

Source: BC STATS and Statistics Canada

Detailed Table 19. Top 25 High Technology Import Commodities, 2001

HS Code	Commodity Description [1]	Value ($000,000)	% Total Imports
847330	Parts and accessories of automatic data processing machines & units thereof	457.4	8.4
880240	Aircraft, nes, of an unladen weight exceeding 15,000 kg	407.0	7.5
854213	Monolithic digital integrated circuit, metal oxide semiconductors (MOS technology)	236.1	4.3
847150	Digital process units o/t 8471.41/49, w/n cntg in same hsng storage/input/output	206.4	3.8
851790	Parts of electrical apparatus for line telephone or line telegraphy	197.8	3.6
852520	Transmission apparatus, for radio- teleph incorporating reception apparatus	175.5	3.2
847160	Input or output units, whether or not containing storage units in the same housing	174.8	3.2
880330	Aircraft parts, nes	170.4	3.1
841191	Parts of turbo-jets or turbo-propellers	167.7	3.1
852812	TV receivers w/n incorp radio-broadcast receivers/sound/video etc., colour	159.9	2.9
847130	Portable digital auto data process mach <= 10 kg with CPU, keyboard & display	132.8	2.4
852990	Parts suitable for use solely or princ with the app of headings 85.25 to 85.28 [2]	131.1	2.4
841199	Parts of gas turbines, nes	130.3	2.4
847180	Other units for automatic data processing machines	124.0	2.3
901890	Instruments and appliances used in medical or veterinary sciences, nes	123.9	2.3
847170	Storage units	116.2	2.1
903289	Automatic regulating or controlling nstruments and apparatus, nes	113.2	2.1
847149	Other digital automatic data processing mach, presented in the form of systems	105.9	1.9
880230	Aircraft, nes, of an unladen weight > 2,000 kg but not exceeding 15,000 kg	98.8	1.8
853400	Printed circuits	73.8	1.4
851750	Apparatus, for carrier-current line systems, or for digital line systems, nes	73.8	1.4
847989	Machines & mechanical appliances, nes, having individual functions	69.1	1.3
854470	Optical fibre cables, made up of individually sheathed fibres	53.6	1.0
852431	Recorded discs for laser reading systems for reproducing phenomena o/t sound or image	51.3	0.9
852510	Transmission apparatus for radio-teleph radio-broadcasting or television	50.5	0.9
Subtotal		**3,801.4**	**70.0**
	All Other High Technology Commodities	1,632.5	30.0
Total		**5,433.9**	**100.0**

HS code = Harmonized System commodity code; NES = Not Elsewhere Specified

1. Commodity descriptions are drawn from the approved Harmonized System coding manual. They contain numerous abbreviations that have been left in original form in this table.
2. Refers to broadcasting and radar transmission and receiving equipment

Source: BC STATS and Statistics Canada

Detailed Table 20. Exports of High Technology Goods and Total Goods, by Destination, 1991-2001

Value ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
High Technology Exports											
United States	184.2	326.1	393.0	366.3	399.3	456.7	606.7	800.2	867.4	946.0	763.0
Pacific Rim	41.1	64.6	88.7	87.4	101.4	134.4	143.1	117.5	99.6	83.7	72.7
Japan	*10.9*	*13.8*	*12.5*	*14.5*	*28.3*	*21.1*	*23.1*	*10.6*	*7.9*	*34.6*	*18.2*
Hong Kong	*5.3*	*18.5*	*18.3*	*21.0*	*30.3*	*18.6*	*25.9*	*39.1*	*14.1*	*7.6*	*9.4*
People's Republic of China	*6.8*	*11.9*	*8.2*	*11.2*	*3.9*	*20.5*	*29.0*	*29.0*	*21.9*	*5.5*	*13.6*
Taiwan	*1.3*	*3.3*	*6.5*	*3.6*	*5.3*	*8.9*	*15.0*	*18.2*	*24.8*	*7.2*	*5.7*
South Korea	*6.0*	*1.8*	*7.7*	*12.2*	*11.4*	*11.2*	*19.1*	*7.3*	*14.6*	*11.3*	*12.3*
European Union (1996)	21.4	25.9	32.5	35.6	39.7	35.0	43.7	66.7	64.6	69.7	96.8
Netherlands	*4.3*	*2.8*	*2.0*	*5.6*	*7.6*	*3.6*	*11.1*	*13.0*	*10.1*	*5.5*	*5.8*
Germany	*3.2*	*5.9*	*6.0*	*6.7*	*5.7*	*6.6*	*5.0*	*15.4*	*7.5*	*6.0*	*9.2*
United Kingdom	*3.7*	*5.7*	*13.1*	*9.2*	*7.2*	*10.4*	*10.2*	*8.3*	*11.7*	*15.7*	*25.4*
France	*4.0*	*3.0*	*3.5*	*3.3*	*5.5*	*3.5*	*7.2*	*7.5*	*8.4*	*2.1*	*6.0*
Italy	*1.8*	*1.9*	*1.4*	*1.1*	*1.7*	*4.0*	*1.0*	*4.4*	*2.9*	*21.8*	*32.2*
All Other Countries	19.6	29.4	32.7	29.7	22.0	37.1	43.8	27.0	33.3	33.1	46.5
Total	**266.4**	**446.0**	**546.9**	**518.9**	**562.3**	**663.1**	**837.2**	**1,011.4**	**1,064.9**	**1,132.5**	**978.9**
Total Exports											
United States	6,617.3	7,994.3	10,061.0	12,354.6	13,288.0	13,895.1	14,863.1	16,375.0	19,370.7	22,191.7	21,432.9
Pacific Rim	5,799.9	5,840.7	6,887.7	7,898.0	9,857.5	9,226.4	9,023.7	6,969.7	7,005.4	7,990.4	6,432.5
Japan	*4,046.9*	*4,133.3*	*4,946.5*	*5,657.9*	*6,764.6*	*6,403.8*	*6,003.4*	*4,548.5*	*4,396.6*	*4,812.0*	*3,886.5*
Hong Kong	*94.1*	*125.5*	*149.1*	*191.5*	*270.6*	*258.3*	*352.0*	*272.2*	*256.0*	*249.2*	*206.5*
People's Republic of China	*227.1*	*240.5*	*284.3*	*305.2*	*500.6*	*514.1*	*455.5*	*464.5*	*590.8*	*736.3*	*755.6*
Taiwan	*262.5*	*265.3*	*347.3*	*360.9*	*482.0*	*354.3*	*457.3*	*399.6*	*363.8*	*397.2*	*308.4*
South Korea	*631.4*	*508.6*	*580.9*	*738.5*	*979.5*	*866.1*	*953.2*	*678.0*	*754.0*	*929.1*	*752.8*
European Union (1996)	2,243.9	2,038.8	1,562.3	1,936.7	2,881.9	1,959.5	2,064.1	2,008.4	1,886.2	2,556.5	2,091.5
Netherlands	*189.5*	*152.0*	*135.1*	*99.3*	*184.8*	*164.1*	*204.3*	*251.5*	*235.3*	*174.6*	*211.9*
Germany	*449.7*	*428.3*	*349.6*	*465.7*	*694.4*	*409.1*	*475.6*	*395.6*	*299.3*	*534.4*	*379.0*
United Kingdom	*573.4*	*543.9*	*310.5*	*321.3*	*377.7*	*336.4*	*288.7*	*302.5*	*287.8*	*368.3*	*348.3*
France	*230.2*	*167.6*	*138.7*	*169.0*	*317.6*	*182.3*	*183.5*	*175.8*	*167.1*	*217.0*	*166.2*
Italy	*309.7*	*304.1*	*266.9*	*408.7*	*646.1*	*435.5*	*474.1*	*439.1*	*445.6*	*617.1*	*522.4*
All Other Countries	561.8	484.6	504.6	645.2	865.8	683.8	809.8	691.9	549.5	700.8	712.8
Total	**15,222.9**	**16,358.3**	**19,015.7**	**22,834.5**	**26,893.1**	**25,764.8**	**26,760.7**	**26,045.1**	**28,811.9**	**33,439.3**	**30,669.8**

Source: BC STATS and Statistics Canada

Detailed Table 20 (ctd). Exports of High Technology Goods and Total Goods, by Destination, 1991-2001

	% change from previous year									
	1992	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
High Technology Exports										
United States	77.0	20.5	-6.8	9.0	14.4	32.9	31.9	8.4	9.1	-19.3
Pacific Rim	57.0	37.3	-1.5	16.1	32.5	6.5	-17.8	-15.3	-15.9	-13.2
Japan	*26.6*	*-9.4*	*15.9*	*94.9*	*-25.5*	*9.4*	*-54.0*	*-25.9*	*340.1*	*-47.6*
Hong Kong	*251.6*	*-1.5*	*15.0*	*44.3*	*-38.6*	*39.3*	*50.9*	*-63.9*	*-46.2*	*23.4*
People's Republic of China	*74.4*	*-31.0*	*36.4*	*-65.1*	*422.5*	*41.6*	*-0.3*	*-24.5*	*-74.8*	*147.0*
Taiwan	*160.7*	*93.9*	*-44.4*	*47.4*	*68.3*	*68.3*	*21.3*	*35.8*	*-70.8*	*-20.9*
South Korea	*-69.7*	*323.1*	*57.7*	*-6.4*	*-2.0*	*70.6*	*-61.8*	*100.3*	*-22.4*	*8.2*
European Union (1996)	21.1	25.5	9.3	11.6	-11.8	24.7	52.8	-3.1	7.8	38.9
Netherlands	*-35.2*	*-26.8*	*175.4*	*36.2*	*-53.2*	*210.6*	*16.5*	*-22.3*	*-44.9*	*3.9*
Germany	*82.8*	*1.7*	*12.4*	*-15.7*	*15.4*	*-24.0*	*208.7*	*-51.3*	*-19.6*	*52.7*
United Kingdom	*54.6*	*130.3*	*-29.5*	*-21.9*	*43.7*	*-1.2*	*-19.4*	*41.5*	*34.7*	*61.3*
France	*-25.8*	*16.6*	*-5.4*	*67.7*	*-35.8*	*103.7*	*4.6*	*11.6*	*-74.4*	*180.4*
Italy	*0.5*	*-24.5*	*-17.7*	*48.9*	*134.5*	*-75.5*	*350.3*	*-35.6*	*663.1*	*48.1*
All Other Countries	49.8	11.2	-9.1	-25.8	68.5	18.0	-38.3	23.3	-0.7	40.4
Total Growth	**67.4**	**22.6**	**-5.1**	**8.4**	**17.9**	**26.3**	**20.8**	**5.3**	**6.3**	**-13.6**
Total Exports										
United States	20.8	25.9	22.8	7.6	4.6	7.0	10.2	18.3	14.6	-3.4
Pacific Rim	0.7	17.9	14.7	24.8	-6.4	-2.2	-22.8	0.5	14.1	-19.5
Japan	*2.1*	*19.7*	*14.4*	*19.6*	*-5.3*	*-6.3*	*-24.2*	*-3.3*	*9.4*	*-19.2*
Hong Kong	*33.4*	*18.8*	*28.5*	*41.2*	*-4.5*	*36.3*	*-22.7*	*-6.0*	*-2.6*	*-17.1*
People's Republic of China	*5.9*	*18.2*	*7.3*	*64.0*	*2.7*	*-11.4*	*2.0*	*27.2*	*24.6*	*2.6*
Taiwan	*1.1*	*30.9*	*3.9*	*33.6*	*-26.5*	*29.1*	*-12.6*	*-9.0*	*9.2*	*-22.4*
South Korea	*-19.5*	*14.2*	*27.1*	*32.6*	*-11.6*	*10.1*	*-28.9*	*11.2*	*23.2*	*-19.0*
European Union (1996)	-9.1	-23.4	24.0	48.8	-32.0	5.3	-2.7	-6.1	35.5	-18.2
Netherlands	*-19.8*	*-11.1*	*-26.4*	*86.0*	*-11.2*	*24.6*	*23.1*	*-6.4*	*-25.8*	*21.3*
Germany	*-4.8*	*-18.4*	*33.2*	*49.1*	*-41.1*	*16.2*	*-16.8*	*-24.3*	*78.6*	*-29.1*
United Kingdom	*-5.1*	*-42.9*	*3.5*	*17.6*	*-10.9*	*-14.2*	*4.8*	*-4.8*	*28.0*	*-5.4*
France	*-27.2*	*-17.2*	*21.8*	*88.0*	*-42.6*	*0.6*	*-4.2*	*-4.9*	*29.9*	*-23.4*
Italy	*-1.8*	*-12.2*	*53.2*	*58.1*	*-32.6*	*8.9*	*-7.4*	*1.5*	*38.5*	*-15.3*
All Other Countries	-13.7	4.1	27.9	34.2	-21.0	18.4	-14.6	-20.6	27.5	1.7
Total Growth	**7.5**	**16.2**	**20.1**	**17.8**	**-4.2**	**3.9**	**-2.7**	**10.6**	**16.1**	**-8.3**

Source: BC STATS and Statistics Canada

Detailed Table 21. Imports of High Technology, by Country of Origin, 1991-2001

Value ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
High Technology Imports											
United States	1,035.3	1,161.3	1,181.7	1,522.6	1,742.1	2,237.9	2,737.0	2,837.1	2,938.5	3,197.2	2,834.4
Pacific Rim	298.1	342.5	410.9	511.4	606.6	705.9	954.1	977.6	1,083.2	1,268.0	1,077.8
Japan	*181.1*	*193.9*	*210.1*	*229.4*	*269.1*	*272.2*	*349.2*	*349.5*	*362.9*	*401.6*	*328.0*
Hong Kong	*9.8*	*10.8*	*12.2*	*12.0*	*14.1*	*15.5*	*23.1*	*17.5*	*22.1*	*25.7*	*16.3*
People's Republic of China	*3.1*	*5.8*	*9.8*	*19.5*	*28.3*	*38.8*	*53.8*	*64.7*	*90.6*	*126.1*	*159.8*
Taiwan	*29.8*	*40.9*	*53.0*	*60.3*	*62.7*	*91.6*	*146.2*	*174.4*	*204.0*	*200.6*	*172.3*
South Korea	*27.5*	*31.4*	*40.8*	*56.7*	*74.0*	*88.0*	*101.3*	*83.7*	*103.6*	*144.8*	*122.5*
European Union (1996)	259.8	286.2	269.6	308.0	434.4	418.1	654.2	645.2	752.8	740.5	878.2
Netherlands	*8.4*	*6.7*	*8.6*	*14.9*	*20.3*	*14.1*	*10.7*	*14.5*	*15.4*	*16.3*	*20.5*
Germany	*50.4*	*49.3*	*61.8*	*75.4*	*68.6*	*68.6*	*71.7*	*81.2*	*103.3*	*118.6*	*145.4*
United Kingdom	*42.7*	*51.8*	*54.4*	*68.6*	*121.0*	*120.2*	*140.5*	*150.7*	*230.5*	*344.1*	*235.7*
France	*99.1*	*110.0*	*53.4*	*39.0*	*69.4*	*122.5*	*319.5*	*277.5*	*273.2*	*113.6*	*295.9*
Italy	*12.3*	*13.3*	*20.2*	*29.8*	*43.0*	*21.6*	*25.4*	*24.5*	*25.3*	*22.8*	*42.4*
All Other Countries	88.4	96.7	118.3	147.6	178.1	240.6	283.7	338.7	460.4	623.0	643.6
Total Value	**1,681.6**	**1,886.7**	**1,980.5**	**2,489.7**	**2,961.2**	**3,602.4**	**4,629.0**	**4,798.6**	**5,234.9**	**5,828.7**	**5,433.9**

% change from previous year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
High Technology Imports										
United States	12.2	1.8	28.8	14.4	28.5	22.3	3.7	3.6	8.8	-11.3
Pacific Rim	14.9	20.0	24.5	18.6	16.4	35.2	2.5	10.8	17.1	-15.0
Japan	*7.0*	*8.4*	*9.2*	*17.3*	*1.1*	*28.3*	*0.1*	*3.8*	*10.7*	*-18.3*
Hong Kong	*10.1*	*12.4*	*-1.1*	*16.9*	*10.2*	*48.9*	*-24.0*	*25.8*	*16.5*	*-36.8*
People's Republic of China	*88.7*	*69.5*	*99.0*	*45.1*	*37.3*	*38.4*	*20.3*	*40.1*	*39.1*	*26.7*
Taiwan	*37.4*	*29.4*	*13.9*	*3.9*	*46.1*	*59.6*	*19.3*	*17.0*	*-1.7*	*-14.1*
South Korea	*14.4*	*29.7*	*39.0*	*30.5*	*19.0*	*15.1*	*-17.4*	*23.8*	*39.7*	*-15.4*
European Union	10.2	-5.8	14.2	41.1	-3.8	56.5	-1.4	16.7	-1.6	18.6
Netherlands	*-20.0*	*27.4*	*73.4*	*36.7*	*-30.7*	*-23.7*	*34.6*	*6.7*	*5.5*	*26.0*
Germany	*-2.2*	*25.4*	*22.1*	*-9.1*	*0.1*	*4.5*	*13.2*	*27.3*	*14.8*	*22.6*
United Kingdom	*21.3*	*5.1*	*26.1*	*76.3*	*-0.7*	*16.9*	*7.2*	*53.0*	*49.3*	*-31.5*
France	*11.1*	*-51.5*	*-26.9*	*77.9*	*76.3*	*160.9*	*-13.2*	*-1.5*	*-58.4*	*160.5*
Italy	*7.9*	*52.1*	*47.4*	*44.3*	*-49.8*	*17.8*	*-3.5*	*3.2*	*-9.8*	*85.9*
All Other Countries	9.4	22.3	24.8	20.6	35.1	17.9	19.4	35.9	35.3	3.3
Total Growth	**12.2**	**5.0**	**25.7**	**18.9**	**21.7**	**28.5**	**3.7**	**9.1**	**11.3**	**-6.8**

Source: BC STATS and Statistics Canada

Detailed Table 22. Balance of Trade in High Technology Goods, by Country, 1991-2001

	Balance ($ million)										
	1991	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
High Technology Commodities											
United States	-851.1	-835.2	-788.7	-1,156.3	-1,342.9	-1,781.2	-2,130.3	-2,036.9	-2,071.1	-2,251.2	-2,071.4
Pacific Rim	-256.9	-277.9	-322.2	-424.1	-505.2	-571.5	-811.1	-860.0	-983.6	-1,184.3	-1,005.1
Japan	*-170.2*	*-180.0*	*-197.6*	*-214.9*	*-240.8*	*-251.1*	*-326.1*	*-338.8*	*-355.0*	*-367.0*	*-309.8*
Hong Kong	*-4.6*	*7.7*	*6.1*	*9.0*	*16.2*	*3.1*	*2.8*	*21.5*	*-7.9*	*-18.1*	*-6.9*
People's Republic of China	*3.8*	*6.2*	*-1.6*	*-8.2*	*-24.4*	*-18.3*	*-24.7*	*-35.7*	*-68.8*	*-120.6*	*-146.2*
Taiwan	*-28.5*	*-37.6*	*-46.5*	*-56.7*	*-57.4*	*-82.7*	*-131.2*	*-156.1*	*-179.2*	*-193.3*	*-166.6*
South Korea	*-21.5*	*-29.6*	*-33.0*	*-44.5*	*-62.6*	*-76.8*	*-82.2*	*-76.4*	*-89.0*	*-133.5*	*-110.3*
European Union (1996)	-238.4	-260.3	-237.1	-272.4	-394.8	-383.1	-610.5	-578.6	-688.2	-670.8	-781.4
Netherlands	*-4.1*	*-3.9*	*-6.5*	*-9.3*	*-12.7*	*-10.5*	*0.4*	*-1.5*	*-5.4*	*-10.7*	*-14.7*
Germany	*-47.1*	*-43.4*	*-55.8*	*-68.7*	*-62.9*	*-62.1*	*-66.7*	*-65.8*	*-95.8*	*-112.5*	*-136.2*
United Kingdom	*-39.0*	*-46.1*	*-41.3*	*-59.4*	*-113.8*	*-109.8*	*-130.3*	*-142.4*	*-218.8*	*-328.3*	*-210.3*
France	*-95.1*	*-107.1*	*-50.0*	*-35.8*	*-64.0*	*-118.9*	*-312.3*	*-270.0*	*-264.9*	*-111.4*	*-289.9*
Italy	*-10.5*	*-11.4*	*-18.8*	*-28.6*	*-41.3*	*-17.6*	*-24.4*	*-20.1*	*-22.5*	*-1.1*	*-10.2*
All Other Countries	-68.8	-67.3	-85.6	-118.0	-156.1	-203.5	-239.9	-311.7	-427.1	-589.9	-597.1
Total	**-1,415.2**	**-1,440.8**	**-1,433.6**	**-1,970.8**	**-2,398.9**	**-2,939.3**	**-3,791.8**	**-3,787.2**	**-4,169.9**	**-4,696.2**	**-4,455.0**

Source: BC STATS and Statistics Canada

Detailed Table 23. Exports of High Technology Goods, by Commodity Group, 1991-2001

Value ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	139.8	270.1	324.9	279.7	272.8	374.6	465.3	504.9	437.1	348.3	286.8
Computer Integrated Manufacturing	34.7	53.9	67.9	78.4	88.7	91.5	113.5	117.8	117.0	127.9	143.4
Aerospace	34.6	24.5	38.3	24.2	54.4	52.4	53.5	103.7	128.6	110.0	124.3
Electronics	17.1	35.6	45.3	67.1	70.7	76.6	75.4	83.4	81.3	75.7	90.3
Material Design	9.8	21.1	24.1	22.6	18.5	0.9	13.7	57.7	94.0	178.6	71.0
Life Sciences	19.0	27.1	24.5	24.1	26.5	30.5	48.0	57.3	74.1	81.9	94.6
Opto-Electronics	8.6	12.2	20.0	20.4	26.1	33.4	62.8	79.9	127.7	202.0	159.4
Weapons and Nuclear	2.0	0.9	0.7	1.1	2.6	2.5	4.0	4.5	2.6	6.6	7.4
Biotechnology	0.7	0.6	1.3	1.4	2.0	0.8	1.0	2.2	2.4	1.5	1.6
Total	**266.4**	**446.0**	**546.9**	**518.9**	**562.3**	**663.1**	**837.2**	**1,011.4**	**1,064.9**	**1,132.5**	**978.9**

% change from previous year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	93.2	20.3	-13.9	-2.5	37.3	24.2	8.5	-13.4	-20.3	-17.7
Computer Integrated Manufacturing	55.7	25.8	15.6	13.1	3.1	24.1	3.7	-0.7	9.4	12.1
Aerospace	-29.3	56.5	-36.9	124.6	-3.7	2.1	94.0	24.0	-14.5	13.1
Electronics	108.1	27.1	48.2	5.5	8.3	-1.6	10.6	-2.5	-6.9	19.3
Material Design	113.7	14.5	-6.4	-18.0	-94.9	1351.2	321.9	63.0	90.0	-60.3
Life Sciences	42.5	-9.7	-1.6	10.2	14.8	57.6	19.4	29.3	10.5	15.5
Opto-Electronics	41.0	64.4	2.2	27.9	27.8	88.2	27.2	59.8	58.2	-21.1
Weapons and Nuclear	-54.6	-18.5	46.9	133.9	-3.5	64.4	10.8	-41.1	150.1	12.6
Biotechnology	-15.7	113.5	8.8	45.8	-60.1	21.6	128.5	8.9	-37.9	5.0
Total	**67.4**	**22.6**	**-5.1**	**8.4**	**17.9**	**26.3**	**20.8**	**5.3**	**6.3**	**-13.6**

Source: BC STATS and Statistics Canada

Detailed Table 24. Imports of High Technology Goods, by Commodity Group, 1991-2001

Value ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	735.3	872.5	943.5	1,233.9	1,413.2	1,704.0	2,182.6	2,226.3	2,342.0	2,723.9	2,432.8
Computer Integrated Manufacturing	154.0	147.1	206.5	260.7	307.6	283.0	395.3	346.1	355.1	431.4	388.0
Aerospace	330.1	346.1	232.0	233.6	337.4	613.1	851.3	874.7	1,013.3	924.5	1,156.8
Electronics	132.0	142.7	160.3	222.9	287.7	436.7	615.9	634.6	739.9	824.7	493.6
Material Design	6.4	11.1	10.3	16.7	18.1	34.6	32.0	51.1	83.3	142.5	75.8
Life Sciences	256.1	283.8	331.6	398.3	475.4	325.0	327.2	405.3	457.7	486.7	574.8
Opto-Electronics	25.3	32.3	35.2	40.0	44.7	106.0	142.1	165.8	164.4	208.5	200.1
Weapons and Nuclear	25.9	30.4	34.0	50.4	45.1	67.7	50.0	48.8	39.6	44.0	45.8
Biotechnology	16.5	20.7	27.1	33.2	32.0	32.4	32.6	46.0	39.7	42.7	66.3
Total	**1,681.6**	**1,886.7**	**1,980.5**	**2,489.7**	**2,961.2**	**3,602.4**	**4,629.0**	**4,798.6**	**5,234.9**	**5,828.7**	**5,433.9**

% change from previous year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	18.7	8.1	30.8	14.5	20.6	28.1	2.0	5.2	16.3	-10.7
Computer Integrated Manufacturing	-4.5	40.4	26.2	18.0	-8.0	39.7	-12.4	2.6	21.5	-10.0
Aerospace	4.9	-33.0	0.7	44.4	81.7	38.9	2.7	15.8	-8.8	25.1
Electronics	8.1	12.3	39.1	29.1	51.8	41.0	3.0	16.6	11.5	-40.1
Material Design	74.3	-7.2	62.1	8.1	91.4	-7.7	59.9	63.0	71.1	-46.8
Life Sciences	10.8	16.9	20.1	19.3	-31.6	0.7	23.9	12.9	6.4	18.1
Opto-Electronics	27.8	9.0	13.4	11.9	136.9	34.1	16.6	-0.8	26.8	-4.0
Weapons and Nuclear	17.0	12.0	48.2	-10.4	50.0	-26.1	-2.5	-18.8	11.0	4.1
Biotechnology	25.6	30.8	22.7	-3.6	1.2	0.5	41.2	-13.8	7.6	55.3
Total	**12.2**	**5.0**	**25.7**	**18.9**	**21.7**	**28.5**	**3.7**	**9.1**	**11.3**	**-6.8**

Source: BC STATS and Statistics Canada

Detailed Table 25. Balance of Trade in High Technology Goods, by Commodity Group, 1991-2001

	Balance ($ million)										
	1991	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**
Computers and Telecommunications	-595.5	-602.4	-618.7	-954.2	-1,140.4	-1,329.4	-1,717.3	-1,721.3	-1,904.8	-2,375.5	-2,146.0
Computer Integrated Manufacturing	-119.4	-93.2	-138.6	-182.2	-218.8	-191.5	-281.7	-228.4	-238.1	-303.4	-244.6
Aerospace	-295.4	-321.6	-193.6	-209.4	-283.0	-560.7	-797.8	-771.0	-884.7	-814.5	-1,032.5
Electronics	-114.9	-107.1	-115.0	-155.8	-216.9	-360.1	-540.5	-551.2	-658.6	-749.0	-403.3
Material Design	3.5	9.9	13.8	5.8	0.4	-33.7	-18.3	6.6	10.7	36.1	-4.8
Life Sciences	-237.1	-256.7	-307.2	-374.3	-448.9	-294.5	-279.2	-347.9	-383.6	-404.9	-480.2
Opto-Electronics	-16.7	-20.2	-15.2	-19.5	-18.6	-72.6	-79.3	-85.8	-36.7	-6.5	-40.6
Weapons and Nuclear	-23.9	-29.4	-33.3	-49.3	-42.6	-65.2	-46.0	-44.3	-37.0	-37.4	-38.3
Biotechnology	-15.8	-20.1	-25.8	-31.8	-30.0	-31.6	-31.6	-43.8	-37.2	-41.1	-64.7
Total	**-1,415.2**	**-1,440.8**	**-1,433.6**	**-1,970.8**	**-2,398.9**	**-2,939.3**	**-3,791.8**	**-3,787.2**	**-4,169.9**	**-4,696.2**	**-4,455.0**

Source: BC STATS and Statistics Canada

Detailed Table 26. Exports of High Technology Goods to the United States, by Commodity Group, 1991-2001

Value ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	91.7	202.7	237.4	187.6	171.7	234.5	312.4	361.0	311.5	276.9	218.2
Computer Integrated Manufacturing	22.2	22.6	35.3	47.6	57.1	67.8	70.8	91.9	89.8	94.6	98.1
Aerospace	28.4	21.5	27.2	20.1	48.7	40.9	48.1	96.6	122.2	87.9	95.1
Electronics	16.1	33.8	42.2	56.1	65.7	64.2	65.8	73.9	71.2	65.4	80.9
Material Design	7.6	20.9	23.6	21.7	18.2	0.8	13.7	57.3	93.9	178.3	50.3
Life Sciences	10.9	16.4	14.9	17.2	16.8	23.7	40.7	46.7	63.7	71.4	84.8
Opto-Electronics	5.4	7.4	11.6	14.7	19.8	23.5	51.1	68.1	113.3	169.1	127.5
Weapons and Nuclear	1.3	0.2	0.1	0.5	0.8	0.7	3.5	4.2	1.1	1.8	6.5
Biotechnology	0.6	0.5	0.7	0.8	0.4	0.6	0.6	0.7	0.7	0.6	1.5
Total	**184.2**	**326.1**	**393.0**	**366.3**	**399.3**	**456.7**	**606.7**	**800.2**	**867.4**	**946.0**	**763.0**

% change from previous year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	121.0	17.1	-21.0	-8.5	36.6	33.2	15.5	-13.7	-11.1	-21.2
Computer Integrated Manufacturing	1.6	56.3	34.6	20.1	18.6	4.4	29.9	-2.3	5.3	3.8
Aerospace	-24.1	26.1	-25.9	141.9	-16.0	17.6	100.8	26.4	-28.0	8.1
Electronics	109.9	24.8	32.9	17.2	-2.3	2.5	12.2	-3.5	-8.2	23.8
Material Design	175.9	12.9	-7.7	-16.2	-95.8	1666.4	319.3	63.9	89.9	-71.8
Life Sciences	51.1	-9.1	15.3	-2.2	41.1	71.7	14.5	36.5	12.0	18.9
Opto-Electronics	36.1	56.3	27.2	34.8	18.2	117.9	33.2	66.4	49.3	-24.6
Weapons and Nuclear	-86.2	-26.4	278.6	65.8	-16.0	415.4	18.8	-72.5	55.0	267.7
Biotechnology	-10.6	35.8	9.0	-54.5	70.4	-0.5	10.5	2.3	-9.6	135.6
Total	**77.0**	**20.5**	**-6.8**	**9.0**	**14.4**	**32.9**	**31.9**	**8.4**	**9.1**	**-19.3**

Source: BC STATS and Statistics Canada

Detailed Table 27. Imports of High Technology Goods from the United States, by Commodity Group, 1991-2001

Value ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	454.1	545.4	549.9	753.0	879.0	1,050.6	1,321.4	1,326.1	1,264.0	1,384.7	1,146.5
Computer Integrated Manufacturing	104.3	103.7	146.7	191.3	198.8	192.7	296.1	252.9	264.5	309.8	265.7
Aerospace	206.3	216.7	155.6	174.1	237.8	418.3	433.1	472.5	530.2	522.3	609.1
Electronics	77.6	84.3	86.0	111.9	141.1	225.5	313.5	315.6	351.3	392.6	252.7
Material Design	5.6	10.3	9.2	15.8	15.5	30.5	28.5	45.9	73.2	109.5	46.3
Life Sciences	146.9	155.6	177.1	204.6	205.2	196.1	197.7	256.6	289.2	289.1	317.4
Opto-Electronics	9.4	11.9	13.6	16.2	17.6	61.5	93.7	110.7	114.8	138.9	136.6
Weapons and Nuclear	17.8	17.4	22.4	29.9	25.5	42.9	31.2	26.7	22.6	23.9	25.4
Biotechnology	13.3	16.1	21.2	25.7	21.5	19.8	21.8	30.1	28.7	26.2	34.7
Total	**1,035.3**	**1,161.3**	**1,181.6**	**1,522.6**	**1,742.1**	**2,237.9**	**2,737.0**	**2,837.1**	**2,938.5**	**3,197.2**	**2,834.4**

% change from previous year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	20.1	0.8	36.9	16.7	19.5	25.8	0.3	-4.7	9.6	-17.2
Computer Integrated Manufacturing	-0.6	41.6	30.4	3.9	-3.1	53.7	-14.6	4.6	17.1	-14.2
Aerospace	5.0	-28.2	11.9	36.6	75.9	3.5	9.1	12.2	-1.5	16.6
Electronics	8.5	2.1	30.1	26.0	59.9	39.0	0.7	11.3	11.8	-35.7
Material Design	83.2	-10.5	71.3	-1.7	96.0	-6.6	61.2	59.6	49.6	-57.7
Life Sciences	5.9	13.8	15.6	0.3	-4.5	0.8	29.8	12.7	0.0	9.8
Opto-Electronics	26.5	13.8	19.3	8.9	249.0	52.3	18.2	3.7	21.0	-1.6
Weapons and Nuclear	-2.1	28.8	33.6	-14.6	67.8	-27.1	-14.5	-15.3	5.7	6.1
Biotechnology	21.1	31.2	21.3	-16.3	-7.8	10.1	37.7	-4.6	-8.6	32.3
Total	**12.2**	**1.8**	**28.9**	**14.4**	**28.5**	**22.3**	**3.7**	**3.6**	**8.8**	**-11.3**

Source: BC STATS and Statistics Canada

Detailed Table 28. Balance of Trade in High Technology Goods with the United States, by Commodity Group, 1991-2001

Balance ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	-362.3	-342.7	-312.5	-565.4	-707.4	-816.0	-1,009.0	-965.1	-952.5	-1,107.8	-928.3
Computer Integrated Manufacturing	-82.0	-81.1	-111.4	-143.8	-141.7	-124.9	-225.4	-161.1	-174.8	-215.2	-167.6
Aerospace	-177.9	-195.1	-128.4	-154.0	-189.1	-377.4	-384.9	-375.9	-408.1	-434.4	-514.1
Electronics	-61.5	-50.4	-43.8	-55.8	-75.3	-161.4	-247.7	-241.8	-280.0	-327.3	-171.7
Material Design	1.9	10.5	14.3	5.9	2.7	-29.7	-14.8	11.4	20.7	68.8	4.0
Life Sciences	-136.1	-139.2	-162.2	-187.5	-188.4	-172.3	-157.0	-210.0	-225.5	-217.8	-232.6
Opto-Electronics	-4.0	-4.5	-2.0	-1.5	2.2	-38.0	-42.6	-42.6	-1.5	30.2	-9.1
Weapons and Nuclear	-16.5	-17.2	-22.3	-29.4	-24.7	-42.2	-27.7	-22.6	-21.5	-22.2	-18.9
Biotechnology	-12.7	-15.6	-20.4	-24.9	-21.1	-19.2	-21.2	-29.4	-28.0	-25.6	-33.2
Total	**-851.1**	**-835.2**	**-788.6**	**-1,156.3**	**-1,342.9**	**-1,781.2**	**-2,130.3**	**-2,036.9**	**-2,071.1**	**-2,251.2**	**-2,071.4**

Source: BC STATS and Statistics Canada

Detailed Table 29. Exports of High Technology Goods to the Pacific Rim, by Commodity Group, 1991-2001

Values ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	23.4	36.7	57.3	52.1	67.7	105.6	111.6	92.6	74.5	39.7	26.2
Computer Integrated Manufacturing	8.0	14.1	18.3	21.7	19.9	10.8	18.0	13.0	13.3	17.5	27.1
Aerospace	0.5	1.3	2.1	1.8	1.6	2.5	2.5	2.1	1.5	2.2	4.4
Electronics	0.6	1.0	1.1	4.3	2.8	6.7	4.9	5.2	3.9	5.5	6.3
Material Design	2.3	0.2	0.5	0.6	0.3	0.1	0.0	0.1	0.0	0.0	0.2
Life Sciences	4.8	7.7	6.5	4.3	6.9	4.5	3.5	2.9	3.7	4.1	3.6
Opto-Electronics	1.3	2.9	2.5	2.3	1.9	3.4	2.1	1.5	2.4	12.3	4.4
Weapons and Nuclear	0.3	0.6	0.3	0.2	0.3	0.6	0.4	0.1	0.4	2.2	0.4
Biotechnology	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.0	0.3	0.0
Total	**41.1**	**64.6**	**88.7**	**87.4**	**101.4**	**134.4**	**143.1**	**117.5**	**99.6**	**83.7**	**72.7**

% change from previous year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	57.0	56.1	-9.1	30.1	55.9	5.7	-17.0	-19.6	-46.8	-34.0
Computer Integrated Manufacturing	75.8	29.7	18.7	-8.2	-45.5	66.3	-28.0	2.1	31.9	55.2
Aerospace	190.6	55.9	-15.9	-10.2	55.3	0.7	-13.6	-30.2	50.2	97.8
Electronics	66.9	7.9	299.5	-34.9	137.8	-26.7	6.9	-25.5	41.0	15.5
Material Design	-92.1	207.1	10.9	-57.3	-50.7	-96.7	2707.5	-100.0	-	830.4
Life Sciences	61.9	-15.4	-34.5	60.4	-34.6	-21.3	-17.2	24.7	11.3	-12.6
Opto-Electronics	120.7	-14.8	-6.8	-19.8	81.3	-37.5	-31.0	62.1	419.8	-63.9
Weapons and Nuclear	86.1	-49.8	-28.9	41.2	120.8	-34.6	-82.7	465.3	426.0	-81.9
Biotechnology	154.5	100.5	15.4	-40.8	165.8	-100.0	-	42.5	1624.6	-91.7
Total	**57.0**	**37.3**	**-1.5**	**16.1**	**32.5**	**6.5**	**-17.8**	**-15.3**	**-15.9**	**-13.2**

Source: BC STATS and Statistics Canada

Detailed Table 30. Imports of High Technology Goods from the Pacific Rim, by Commodity Group, 1991-2001

Values ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	218.6	255.0	299.2	364.2	401.1	456.2	622.5	629.4	696.0	763.2	720.0
Computer Integrated Manufacturing	24.3	19.0	28.9	31.1	43.4	38.6	43.5	41.3	35.3	53.7	50.3
Aerospace	2.9	2.0	2.5	2.2	2.6	6.6	6.8	18.5	29.0	46.0	31.5
Electronics	17.0	21.7	33.6	56.0	89.6	136.4	214.0	210.7	239.3	296.8	166.4
Material Design	0.2	0.5	0.5	0.5	1.5	1.8	1.2	1.7	5.7	13.3	11.9
Life Sciences	18.2	22.0	22.3	33.1	38.5	27.4	24.1	26.6	37.5	36.1	44.9
Opto-Electronics	13.8	18.3	19.0	19.7	23.6	34.1	37.6	43.9	35.4	52.6	46.8
Weapons and Nuclear	2.6	3.8	4.0	4.0	6.0	4.2	4.0	4.0	3.3	3.6	4.3
Biotechnology	0.4	0.4	0.9	0.6	0.4	0.5	0.3	1.3	1.8	2.7	1.7
Total	**298.1**	**342.5**	**410.9**	**511.4**	**606.6**	**705.9**	**954.1**	**977.6**	**1,083.2**	**1,268.0**	**1,077.8**

% change from previous year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	16.6	17.3	21.7	10.1	13.7	36.5	1.1	10.6	9.7	-5.7
Computer Integrated Manufacturing	-22.1	52.5	7.5	39.5	-11.0	12.6	-5.0	-14.7	52.2	-6.2
Aerospace	-31.8	30.2	-14.6	19.1	156.7	2.4	172.5	56.5	58.5	-31.5
Electronics	27.0	55.3	66.6	59.9	52.3	56.9	-1.5	13.6	24.0	-43.9
Material Design	118.8	-0.6	-4.3	222.5	24.9	-32.9	40.6	231.7	134.3	-10.8
Life Sciences	20.7	1.3	48.8	16.2	-28.8	-11.9	10.2	40.7	-3.5	24.2
Opto-Electronics	32.6	3.9	3.5	20.1	44.2	10.4	16.8	-19.4	48.5	-11.0
Weapons and Nuclear	48.3	4.5	2.0	47.4	-29.6	-4.3	-1.0	-16.7	9.5	17.2
Biotechnology	-3.2	118.0	-24.7	-36.8	20.2	-29.7	285.4	38.2	48.4	-36.6
Total	**14.9**	**20.0**	**24.5**	**18.6**	**16.4**	**35.2**	**2.5**	**10.8**	**17.1**	**-15.0**

Source: BC STATS and Statistics Canada

Detailed Table 31. Balance of Trade in High Technology Goods with the Pacific Rim, by Commodity Group, 1991-2001

Balance ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	-195.3	-218.3	-241.9	-312.1	-333.4	-350.6	-510.9	-536.8	-621.5	-723.6	-693.8
Computer Integrated Manufacturing	-16.3	-4.9	-10.7	-9.4	-23.5	-27.8	-25.5	-28.3	-22.0	-36.2	-23.2
Aerospace	-2.4	-0.6	-0.4	-0.4	-1.0	-4.2	-4.3	-16.4	-27.5	-43.7	-27.0
Electronics	-16.5	-20.7	-32.6	-51.7	-86.8	-129.7	-209.1	-205.5	-235.4	-291.3	-160.1
Material Design	2.0	-0.3	0.1	0.2	-1.2	-1.7	-1.2	-1.6	-5.7	-13.3	-11.7
Life Sciences	-13.4	-14.2	-15.7	-28.8	-31.6	-22.9	-20.6	-23.7	-33.8	-32.1	-41.3
Opto-Electronics	-12.5	-15.3	-16.5	-17.3	-21.7	-30.7	-35.5	-42.4	-33.0	-40.2	-42.3
Weapons and Nuclear	-2.2	-3.2	-3.7	-3.8	-5.7	-3.6	-3.6	-3.9	-2.9	-1.4	-3.9
Biotechnology	-0.4	-0.3	-0.8	-0.5	-0.3	-0.3	-0.3	-1.3	-1.8	-2.4	-1.7
Total	**-256.9**	**-277.9**	**-322.2**	**-424.1**	**-505.2**	**-571.5**	**-811.1**	**-860.0**	**-983.6**	**-1,184.3**	**-1,005.1**

Source: BC STATS and Statistics Canada

Detailed Table 32. Exports of High Technology Goods to Japan, by Commodity Group, 1991-2001

Values ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	4.7	4.5	5.6	6.7	12.8	13.4	15.5	6.0	2.5	16.9	7.1
Computer Integrated Manufacturing	2.4	3.1	3.1	3.9	10.1	3.1	3.3	1.4	2.1	3.8	6.0
Aerospace	0.0	0.2	0.1	0.5	0.1	0.0	0.3	0.9	0.8	0.4	1.1
Electronics	0.0	0.1	0.1	0.6	0.9	1.4	1.8	1.1	0.2	0.5	1.6
Material Design	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Life Sciences	3.5	5.1	3.0	2.1	3.9	1.7	1.3	0.9	1.5	2.3	1.2
Opto-Electronics	0.3	0.7	0.6	0.7	0.5	1.1	0.7	0.2	0.6	8.8	1.2
Weapons and Nuclear	0.0	0.0	0.1	0.0	0.0	0.3	0.3	0.0	0.1	1.9	0.0
Biotechnology	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Total	**10.9**	**13.8**	**12.5**	**14.5**	**28.3**	**21.1**	**23.1**	**10.6**	**7.9**	**34.6**	**18.2**

% change from previous year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	-4.3	25.2	19.8	91.4	4.8	15.1	-61.0	-58.5	572.6	-57.9
Computer Integrated Manufacturing	31.0	0.0	24.7	156.8	-68.9	5.9	-58.8	52.9	81.9	57.0
Aerospace	730.5	-64.2	574.7	-86.2	-89.5	4382.2	205.3	-17.9	-49.8	180.4
Electronics	476.9	-6.7	885.0	60.8	48.4	28.9	-37.5	-78.4	95.4	229.9
Material Design	1489.4	-100.0	-	-	-100.0	-	-	-100.0	-	-
Life Sciences	45.8	-40.8	-29.0	81.6	-57.6	-23.5	-28.9	66.3	56.8	-50.8
Opto-Electronics	132.4	-12.4	17.0	-31.6	138.1	-40.8	-70.1	224.8	1278.1	-86.0
Weapons and Nuclear	-14.8	190.3	-70.4	89.2	807.2	-22.5	-95.3	1039.2	1247.7	-99.6
Biotechnology	-	-	-	-	588.7	-100.0	-	-100.0	-	-100.0
Total	**26.6**	**-9.4**	**15.9**	**94.9**	**-25.5**	**9.4**	**-54.0**	**-25.9**	**340.1**	**-47.6**

Source: BC STATS and Statistics Canada

Detailed Table 33. Imports of High Technology Goods from Japan, by Commodity Group, 1991-2001

Values ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	127.5	137.8	142.0	152.9	165.1	162.7	220.9	213.8	210.2	208.1	176.6
Computer Integrated Manufacturing	21.7	16.1	25.4	26.3	36.4	32.5	38.0	33.8	27.9	41.7	38.0
Aerospace	1.0	1.2	0.9	0.6	0.8	3.4	3.9	14.7	24.3	23.1	25.6
Electronics	7.9	8.7	11.9	23.7	38.3	41.7	53.7	51.1	57.6	74.8	42.8
Material Design	0.2	0.4	0.4	0.4	1.3	1.4	1.1	1.3	4.3	9.0	6.1
Life Sciences	10.9	13.8	14.1	13.6	15.2	14.3	13.5	14.9	20.2	18.4	20.4
Opto-Electronics	10.6	14.2	13.2	10.0	10.2	14.0	16.1	18.3	17.0	24.7	16.4
Weapons and Nuclear	1.2	1.2	1.4	1.3	1.5	1.8	1.8	1.6	1.3	1.4	1.8
Biotechnology	0.4	0.3	0.8	0.6	0.2	0.4	0.1	0.1	0.2	0.5	0.2
Total	**181.1**	**193.9**	**210.1**	**229.4**	**269.1**	**272.2**	**349.2**	**349.5**	**362.9**	**401.6**	**328.0**

% change from previous year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	8.1	3.0	7.7	7.9	-1.4	35.7	-3.2	-1.7	-1.0	-15.1
Computer Integrated Manufacturing	-25.5	57.5	3.7	38.4	-10.9	17.0	-11.0	-17.5	49.5	-8.9
Aerospace	19.8	-22.8	-30.7	35.0	295.8	16.1	277.1	65.1	-4.9	11.1
Electronics	10.3	36.6	99.1	61.6	9.0	28.8	-4.9	12.7	29.9	-42.8
Material Design	156.9	-2.9	-10.1	240.1	6.0	-20.7	13.0	238.3	111.2	-32.3
Life Sciences	27.2	1.8	-3.2	12.1	-6.5	-5.6	10.4	35.9	-8.8	10.4
Opto-Electronics	34.5	-6.9	-24.5	2.0	37.7	14.9	13.4	-7.2	45.3	-33.4
Weapons and Nuclear	4.1	18.2	-8.5	16.7	20.1	-0.4	-12.4	-16.6	1.4	33.5
Biotechnology	-6.2	124.2	-25.9	-60.1	57.0	-58.7	-48.2	189.2	131.5	-53.5
Total	**7.0**	**8.4**	**9.2**	**17.3**	**1.1**	**28.3**	**0.1**	**3.8**	**10.7**	**-18.3**

Source: BC STATS and Statistics Canada

Detailed Table 34. Balance of Trade in High Technology Goods with Japan, by Commodity Group, 1991-2001

Balance ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	-17.0	-11.7	-19.8	-19.6	-23.6	-149.3	-205.4	-207.7	-207.7	-191.2	-169.5
Computer Integrated Manufacturing	-125.1	-134.7	-138.8	-149.0	-155.0	-29.3	-34.7	-32.4	-25.8	-37.9	-32.0
Aerospace	-1.0	-1.0	-0.8	-0.2	-0.8	-3.3	-3.6	-13.8	-23.5	-22.7	-24.5
Electronics	-7.9	-8.6	-11.8	-23.1	-37.3	-40.3	-51.9	-50.0	-57.3	-74.3	-41.3
Material Design	-0.2	-0.3	-0.4	-0.4	-1.3	-1.4	-1.1	-1.2	-4.3	-9.0	-6.1
Life Sciences	-7.3	-8.7	-11.0	-11.5	-11.4	-12.6	-12.2	-14.0	-18.7	-16.1	-19.2
Opto-Electronics	-10.3	-13.5	-12.7	-9.3	-9.7	-12.9	-15.5	-18.1	-16.3	-15.8	-15.2
Weapons and Nuclear	-1.1	-1.2	-1.4	-1.3	-1.5	-1.5	-1.6	-1.6	-1.2	0.5	-1.8
Biotechnology	-0.4	-0.3	-0.8	-0.6	-0.2	-0.3	-0.1	-0.1	-0.2	-0.4	-0.2
Total	**-170.2**	**-180.0**	**-197.6**	**-214.9**	**-240.8**	**-251.1**	**-326.1**	**-338.8**	**-355.0**	**-367.0**	**-309.8**

Source: BC STATS and Statistics Canada

Detailed Table 35. Exports of High Technology Goods to the Pacific Rim (excluding Japan), 1991-2001

Value ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	18.7	32.2	51.7	45.4	54.9	92.1	96.1	86.6	72.0	22.8	19.1
Computer Integrated Manufacturing	5.6	11.0	15.1	17.8	9.9	7.7	14.7	11.6	11.2	13.7	21.2
Aerospace	0.4	1.2	2.0	1.3	1.5	2.5	2.2	1.2	0.7	1.9	3.4
Electronics	0.6	0.9	1.0	3.7	1.9	5.3	3.1	4.1	3.6	5.0	4.8
Material Design	2.2	0.0	0.5	0.6	0.3	0.1	0.0	0.1	0.0	0.0	0.1
Life Sciences	1.3	2.6	3.5	2.1	3.0	2.8	2.3	2.0	2.2	1.7	2.4
Opto-Electronics	1.0	2.3	1.9	1.6	1.4	2.3	1.5	1.3	1.7	3.5	3.2
Weapons and Nuclear	0.3	0.6	0.2	0.2	0.3	0.3	0.2	0.1	0.3	0.3	0.4
Biotechnology	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.2	0.0
Total	**30.2**	**50.8**	**76.2**	**72.8**	**73.1**	**113.3**	**120.0**	**106.9**	**91.7**	**49.1**	**54.5**

% change from previous year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	72.3	60.4	-12.2	21.0	67.8	4.3	-9.9	-16.8	-68.3	-16.3
Computer Integrated Manufacturing	95.0	38.2	17.4	-44.6	-21.6	90.8	-21.1	-3.9	22.6	54.6
Aerospace	161.9	76.1	-36.1	17.3	61.5	-11.5	-44.2	-39.7	154.4	80.8
Electronics	59.2	8.9	265.1	-50.0	183.2	-41.5	33.0	-10.9	37.4	-4.8
Material Design	-99.9	21685.9	10.9	-57.7	-50.2	-96.7	1571.8	-100.0	-	463.9
Life Sciences	106.3	33.9	-39.2	39.1	-4.7	-19.9	-10.7	6.4	-20.1	39.2
Opto-Electronics	117.5	-15.5	-14.1	-14.8	62.3	-35.9	-13.2	36.7	101.1	-7.9
Weapons and Nuclear	95.4	-59.4	-17.0	36.2	23.3	-47.2	-63.4	352.3	18.1	18.4
Biotechnology	154.5	100.5	15.4	-43.7	143.9	-100.0	-	-	1097.8	-88.1
Total	**68.0**	**50.0**	**-4.4**	**0.3**	**55.0**	**5.9**	**-10.9**	**-14.2**	**-46.5**	**11.0**

Source: BC STATS and Statistics Canada

Detailed Table 36. Imports of High Technology Goods from the Pacific Rim (excluding Japan), by Commodity Group, 1991-2001

Values ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	197.0	238.9	273.8	337.9	364.6	293.5	401.6	415.6	485.8	555.2	543.4
Computer Integrated Manufacturing	-103.1	-118.9	-113.1	-121.8	-121.7	6.2	5.5	7.5	7.4	12.0	12.4
Aerospace	1.9	0.8	1.6	1.5	1.7	3.3	2.9	3.8	4.7	22.9	5.9
Electronics	9.2	12.9	21.7	32.3	51.3	94.7	160.3	159.6	181.7	222.0	123.6
Material Design	0.0	0.0	0.0	0.1	0.1	0.4	0.1	0.4	1.4	4.3	5.7
Life Sciences	7.4	8.2	8.2	19.5	23.3	13.2	10.7	11.8	17.2	17.7	24.5
Opto-Electronics	3.2	4.1	5.8	9.7	13.4	20.0	21.4	25.6	18.4	27.9	30.4
Weapons and Nuclear	1.4	2.6	2.5	2.7	4.4	2.4	2.2	2.4	2.0	2.3	2.4
Biotechnology	0.0	0.1	0.1	0.1	0.2	0.1	0.2	1.3	1.6	2.2	1.5
Total	**116.9**	**148.6**	**200.8**	**282.0**	**337.4**	**433.7**	**604.9**	**628.1**	**720.3**	**866.4**	**749.8**

% change from previous year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	21.3	14.6	23.4	7.9	-19.5	36.8	3.5	16.9	14.3	-2.1
Computer Integrated Manufacturing	15.3	-4.9	7.7	-0.1	-105.1	-10.5	36.4	-2.3	62.7	3.2
Aerospace	-58.6	110.1	-5.7	12.6	89.0	-11.6	32.3	23.5	382.4	-74.4
Electronics	41.4	67.9	48.8	58.6	84.6	69.3	-0.4	13.8	22.2	-44.3
Material Design	-39.3	39.3	66.3	105.5	231.5	-75.6	354.9	212.8	205.2	34.5
Life Sciences	11.2	0.4	137.9	19.1	-43.4	-18.8	10.0	46.7	2.7	38.5
Opto-Electronics	26.3	41.4	67.9	38.9	49.2	7.2	19.4	-28.1	51.5	8.9
Weapons and Nuclear	85.2	-2.0	7.9	62.1	-46.7	-7.3	8.6	-16.8	15.0	7.6
Biotechnology	21.9	77.0	-14.1	130.3	-25.4	46.0	531.7	29.0	37.2	-32.7
Total	**27.1**	**35.1**	**40.5**	**19.7**	**28.5**	**39.5**	**3.8**	**14.7**	**20.3**	**-13.5**

Source: BC STATS and Statistics Canada

Detailed Table 37. Balance of Trade in High Technology Goods with the Pacific Rim (excluding Japan), by Commodity Group, 1991-2001

Balance ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	-178.3	-206.6	-222.1	-292.5	-309.8	-201.4	-305.5	-329.1	-413.8	-532.4	-524.3
Computer Integrated Manufacturing	108.7	129.8	128.2	139.6	131.5	1.5	9.2	4.1	3.8	1.7	8.8
Aerospace	-1.4	0.4	0.4	-0.2	-0.2	-0.8	-0.7	-2.6	-4.0	-21.0	-2.5
Electronics	-8.6	-12.0	-20.7	-28.6	-49.4	-89.4	-157.2	-155.5	-178.1	-217.0	-118.8
Material Design	2.2	0.0	0.5	0.5	0.1	-0.3	-0.1	-0.4	-1.4	-4.2	-5.6
Life Sciences	-6.1	-5.5	-4.7	-17.4	-20.3	-10.3	-8.4	-9.7	-15.1	-16.0	-22.1
Opto-Electronics	-2.2	-1.8	-3.8	-8.0	-12.0	-17.7	-20.0	-24.3	-16.7	-24.4	-27.2
Weapons and Nuclear	-1.1	-2.0	-2.3	-2.5	-4.2	-2.0	-2.0	-2.3	-1.7	-1.9	-2.1
Biotechnology	0.0	0.0	0.0	0.0	-0.1	0.0	-0.2	-1.3	-1.6	-2.0	-1.5
Total	**-86.7**	**-97.9**	**-124.6**	**-209.2**	**-264.4**	**-320.4**	**-485.0**	**-521.2**	**-628.6**	**-817.3**	**-695.3**

Source: BC STATS and Statistics Canada

Detailed Table 38. Exports of High Technology Goods to the European Union, by Commodity Group, 1991-2001

Values ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	12.4	13.0	15.5	23.7	21.9	21.1	27.4	42.0	35.7	21.0	32.2
Computer Integrated Manufacturing	3.5	7.9	4.0	4.7	6.2	5.2	5.5	6.3	5.8	5.6	6.9
Aerospace	1.9	1.1	7.6	1.2	2.8	2.4	1.3	3.1	3.6	15.9	22.5
Electronics	0.1	0.6	0.7	2.0	1.5	1.8	1.8	2.9	5.1	2.9	1.4
Material Design	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.2	4.6
Life Sciences	2.1	2.2	1.9	1.6	2.2	1.7	2.1	4.6	4.9	4.1	4.0
Opto-Electronics	1.2	1.0	2.5	2.1	3.2	2.5	5.5	7.1	8.5	17.4	24.9
Weapons and Nuclear	0.1	0.1	0.3	0.1	0.9	0.3	0.0	0.3	1.0	2.5	0.4
Biotechnology	0.0	0.0	0.1	0.1	1.0	0.0	0.1	0.3	0.1	0.0	0.0
Total	**21.4**	**25.9**	**32.5**	**35.6**	**39.7**	**35.0**	**43.7**	**66.7**	**64.6**	**69.7**	**96.8**

% change from previous year

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	4.7	19.4	52.6	-7.6	-3.7	29.8	53.5	-14.9	-41.2	53.1
Computer Integrated Manufacturing	124.7	-49.4	17.6	32.0	-16.2	5.6	16.1	-9.0	-3.3	23.7
Aerospace	-41.0	574.8	-84.6	139.0	-14.9	-44.1	133.7	15.8	341.8	41.3
Electronics	384.3	0.9	209.0	-25.0	17.6	2.2	60.0	73.7	-42.8	-50.9
Material Design	306.8	-23.1	2084.4	-100.0	-	-100.0	-	-	1364.7	1746.2
Life Sciences	4.8	-10.6	-19.4	37.8	-19.1	20.3	120.2	6.3	-17.6	-2.5
Opto-Electronics	-15.5	146.4	-13.0	49.3	-20.6	116.8	30.0	18.6	105.5	42.8
Weapons and Nuclear	-32.3	192.6	-80.9	1671.1	-70.6	-92.7	1165.9	284.7	158.8	-85.2
Biotechnology	-60.0	311.0	20.3	1005.0	-98.4	312.2	331.1	-76.7	-100.0	-
Total	**21.1**	**25.5**	**9.3**	**11.6**	**-11.8**	**24.7**	**52.8**	**-3.1**	**7.8**	**38.9**

Source: BC STATS and Statistics Canada

Detailed Table 39. Imports of High Technology Goods from the European Union, 1991-2001

Values ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	35.7	43.1	47.4	58.5	63.8	67.0	80.7	89.1	128.6	191.1	110.8
Computer Integrated Manufacturing	21.8	21.7	26.1	31.8	56.7	41.1	44.3	38.7	40.6	51.3	54.8
Aerospace	114.8	122.4	67.5	50.8	88.3	164.5	380.2	334.6	394.9	271.5	456.9
Electronics	10.0	6.4	8.1	19.9	22.6	34.1	33.2	42.8	49.5	45.8	21.3
Material Design	0.5	0.3	0.6	0.4	0.7	1.7	1.3	2.4	2.9	13.8	14.0
Life Sciences	69.5	83.3	110.4	130.3	187.6	83.0	85.0	100.2	107.0	129.5	170.1
Opto-Electronics	1.5	1.5	2.0	3.0	2.6	6.9	8.4	8.3	9.4	12.8	10.7
Weapons and Nuclear	3.7	4.5	4.0	8.6	6.8	13.8	12.7	16.3	12.3	14.8	14.2
Biotechnology	2.1	3.1	3.5	4.8	5.4	5.9	8.4	12.9	7.6	9.8	25.4
Total	**259.8**	**286.2**	**269.6**	**308.0**	**434.4**	**418.1**	**654.2**	**645.2**	**752.8**	**740.5**	**878.2**

Year-Over-Year Growth — **% change from previous year**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	20.5	10.1	23.3	9.2	5.0	20.4	10.4	44.3	48.6	-42.0
Computer Integrated Manufacturing	-0.8	20.6	21.6	78.5	-27.5	7.6	-12.6	5.0	26.4	6.9
Aerospace	6.6	-44.8	-24.8	73.9	86.2	131.2	-12.0	18.0	-31.2	68.3
Electronics	-35.8	25.5	146.5	13.6	51.0	-2.6	28.8	15.8	-7.5	-53.6
Material Design	-39.0	84.5	-34.9	84.1	144.6	-25.0	86.6	20.4	371.5	1.3
Life Sciences	19.8	32.5	18.0	43.9	-55.7	2.3	17.9	6.8	21.0	31.3
Opto-Electronics	-0.9	34.0	53.8	-14.9	164.8	23.1	-1.3	13.0	36.3	-16.5
Weapons and Nuclear	19.2	-9.6	112.0	-20.6	103.7	-8.5	28.8	-24.8	20.8	-4.0
Biotechnology	50.3	12.3	38.0	11.6	10.6	41.6	52.6	-41.0	29.6	158.8
Total	**10.2**	**-5.8**	**14.2**	**41.1**	**-3.8**	**56.5**	**-1.4**	**16.7**	**-1.6**	**18.6**

Source: BC STATS and Statistics Canada

Detailed Table 40. Balance of Trade in High Technology Goods with the European Union, by Commodity Group, 1991-2001

Balance ($ million)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Computers and Telecommunications	-23.3	-30.0	-31.9	-34.8	-41.9	-46.0	-53.4	-47.1	-92.8	-170.0	-78.6
Computer Integrated Manufacturing	-18.3	-13.8	-22.1	-27.1	-50.5	-35.9	-38.8	-32.3	-34.8	-45.7	-47.9
Aerospace	-112.9	-121.3	-59.9	-49.6	-85.5	-162.1	-378.9	-331.5	-391.3	-255.6	-434.4
Electronics	-9.9	-5.8	-7.4	-17.9	-21.1	-32.3	-31.4	-39.9	-44.5	-42.9	-19.9
Material Design	-0.5	-0.3	-0.6	-0.2	-0.7	-1.7	-1.3	-2.4	-2.9	-13.6	-9.4
Life Sciences	-67.5	-81.1	-108.5	-128.7	-185.4	-81.3	-82.9	-95.6	-102.1	-125.4	-166.1
Opto-Electronics	-0.3	-0.5	0.5	-0.9	0.6	-4.3	-2.9	-1.2	-0.9	4.6	14.1
Weapons and Nuclear	-3.6	-4.4	-3.8	-8.5	-5.9	-13.6	-12.6	-16.0	-11.3	-12.3	-13.8
Biotechnology	-2.0	-3.1	-3.4	-4.7	-4.4	-5.9	-8.4	-12.6	-7.5	-9.8	-25.4
Total	**-238.4**	**-260.3**	**-237.1**	**-272.4**	**-394.8**	**-383.1**	**-610.5**	**-578.6**	**-688.2**	**-670.8**	**-781.4**

Source: BC STATS and Statistics Canada

Detailed Table 41. Export of High Technology Services, 1991-2000 [1]

	Value ($ million)									
	1991	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
High Technology Service Exports										
Computer Services	35	78	163	163	208	208	237	456	686	906
Engineering Services	56	67	102	106	138	174	443	222	169	102
Total	**91**	**145**	**265**	**269**	**346**	**382**	**680**	**678**	**855**	**1,008**

	% change from previous year								
	1992	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
High Technology Service Exports									
Computer Services	120.3	109.0	0.0	27.6	0.0	13.9	92.4	50.5	32.0
Engineering Services	20.0	52.6	3.4	30.6	25.7	154.7	-50.0	-24.0	-39.5
Total	**58.9**	**82.9**	**1.3**	**28.8**	**10.3**	**78.0**	**-0.3**	**26.1**	**17.9**

1. Based on surveyed firms only.

Source: Statistics Canada

7 Appendix A: Defining the High Technology Sector

How was the sector definition arrived at?

In 1995, BC STATS and the Science and Technology Division of the Ministry of Employment and Investment[1] developed a definition of the high technology sector that focuses on standard industries that produce high technology goods and services as their ultimate outputs. The definition looked at the high tech outputs of various standard industries (industries defined in the Canadian Standard Industrial Classification–SIC), their level of research activity, their representation in existing lists of high tech companies, and the opinions of an expert panel drawn from government, university, and the private sector.[2] This year, data compiled under the the North American Industry Classification System (NAICS) was available for the industries viewed as high technology and much of the data series sorted by SIC 1970 was discontinued. The switchover to the new classification system has allowed us to revisit the definition and update the list of industries that are deemed "high technology."

Using an approach that conforms to the industrial structure upon which Statistics Canada's data are compiled, it is possible to take advantage of the impressive array of data already collected by the national statistical agency and to create time series of data values.

Are all high tech companies included?

It is recognized that there are some drawbacks to the industry-based definition employed here. The first is that the NAICS does not fully recognize industries of the "new economy." As a result, new products and services are often grouped in an industry that primarily produces similar but distinctly different products and services.

Second, it is difficult to capture the full breadth of high technology or knowledge-intensive activity in the economy through NAICS-based definitions. Innovation is not unique to a specific group of industries, but can be found throughout the whole economy. Some firms on the "leading edge" will be missed if they are classified in industries that, in aggregate, fail to show high tech characteristics. On the other hand, it is impossible to remove those firms in the industries in the sector that lag behind the industry norm.

---

[1] Now the Science, Technology and Telecommunications Division of the Ministry of Competition, Science and Enterprise.

[2] The complete methodology is presented in Lawrance and Miller, Defining the British Columbia High Technology/Knowledge Sector, 1996. This paper is available at http://www.bcstats.gov.bc.ca/data/bus_stat/hi_tech.htm

The industries included in the definition adopted for this profile represent the core of the high technology sector. While it is certainly true that examples of creativity and innovation can be found in every industry, this definition, with its industry focus, includes only those industries where high technology activity is concentrated.

Exactly which industries are included?

The table below lists the industries that are defined, for the purpose of this report, to constitute the high technology sector.

Industries in the High Technology Sector

NAICS	Industry
Manufacturing Industries	
325189	Other Inorganic Chemicals
325410	Pharmaceutical and Medicine
333310	Commercial and Service Industry
334110	Computer and Peripheral
334210	Telephone Apparatus
334220	Radio, Television Broadcasting & Wireless Communications Equipment
334290	Other Communications Equipment
334310	Audio and Video Equipment
334410	Semiconductor and Other Electronic Components
334511	Navigational and Guidance Instruments
334512	Measuring, Medical and Controlling Devices
334610	Manufacturing and Reproducing Magnetic and Optical Media
335315	Switchgear and Switchboard, and Relay and Industrial Control Apparatus
335910	Battery
335920	Communication and Energy Wire and Cable
335990	All Other Electrical Equipment and Component
336410	Aerospace Products and Parts
339110	Medical Equipment and Supplies
Service Industries	
511210	Software Publishers
514210	Data Processing
541330	Engineering
541510	Computer Systems Design and Related

Note:
For the purposes of this report, the manufacturing NAICS industries are grouped together as "Manufacturing." Within this, details are reported for Pharmaceuticals and Aerospace, with the remaining industries covered under "other." Services are similarly grouped, with detail for "Information services" (NAICS 511210 plus 514210) and "Computer and engineering services" (NAICS 541330 plus 541510).

8 Appendix B: Defining High Technology Commodities

Defining high technology commodities

Developing a definitive list of what commodities should be considered high technology is a difficult exercise. Leading technologies are continually evolving and what is considered high technology today may be classified as low tech tomorrow. As a result, the definition of high technology commodities must necessarily change over time. This means that data regarding high technology trade from 1991 may contain commodities that are no longer included in the 2001 definition. However, this does not mean that this data cannot be compared over time. It is still valid to look at growth rates over that period as long as it is clear that the rates represent growth in the changing definition of high technology, rather than a static basket of goods.

One technical limitation that may cause difficulty in temporal comparisons is when there are changes to the definition of Harmonized System codes. When this occurs, there may be a resulting unintended change to the high technology commodity definition. This is due to the fact that the code may now include or exclude commodities that it did not previously, such that these goods can no longer be separated out (or perhaps can be more finely defined, so that low technology commodities that previously had to be included can now be expunged from the definition). However, these changes are usually small and should not have a significant impact on the data.[1]

The U.S. Bureau of the Census' advanced technology products (ATP) list[2] was used to identify high tech commodities in British Columbia's exports and imports. The ATP list of over 200, six-digit, Harmonized System commodity codes was matched against BC's commodity exports for each of the years 1991 through 2001.[3] This process identified the set of high technology commodities exported each year from British Columbia.

To determine the industry source of these exports, the exported high technology commodities were matched against a concordance that linked commodities to industries. For instance, the

[1] It should be noted that previous editions of the BC High Technology Sector report contained errors in the export and import tables, due to changed codes that were missed in calculating high technology trade.

[2] For a discussion of the development and content of this list, see: McGuckin, Robert H., Thomas A. Abbott, Paul Herrick, and Leroy Norfolk. 1991. *Measuring Advanced-Technology Products Trade: A New Approach.* US Bureau of the Census.

[3] Trade data for British Columbia are supplied by Statistics Canada and are available from the Trade Research and Inquiry Package (TRIP) computer reporting system at BC STATS.

concordance assigned exports of various aircraft parts to NAICS 336410, the Aerospace Product and Parts Manufacturing Industry.

A commodity need not be produced by one of the industries included in the high technology definition in order to be considered a high technology product. Some industries not included in the high tech definition, because they mainly manufacture low technology goods, may also manufacture some high technology products. Conversely, it is possible for those industries classified as high technology to also manufacture some products that are considered low tech. In 2001, approximately a quarter of British Columbia exports of high technology goods were produced by industries outside the high technology definition.

The import tables are based on the same group of commodities as the exports. An estimate of BC destination imports was derived using the consumption of Canadian imports of those commodities by the BC economy and applying this ratio to total Canadian imports.

Data for trade in goods are supplied by Statistics Canada and are provided through the Trade Research and Inquiry Package (TRIP) computer reporting system at BC STATS. TRIP offers user-defined tabulations of export or import statistics for British Columbia, Canada, the United States and other countries. Tabulations can include information on commodities, countries, US states, years, months, mode of transport, etc.

Commodity groups

The U.S. Bureau of the Census has defined ten fields involving advanced or high technology commodities. Each field represents a large number of products and processes that are considered to be on the leading edge. These fields have been used to classify exports in this report.

Aerospace

Technological developments in this field include advances that allow planes to fly further, faster, higher, to use less fuel, and to have quieter engines. Many of the advances have been adapted to military applications, such as vertical take-off aircraft and aircraft that require shorter distances for takeoff and landings.

Biotechnology

Biotechnology covers recent developments in recombinant deoxyribonucleic acid (DNA) research and genetic engineering. Obvious examples include drugs, enzymes, and other therapeutic items. Common applications include agricultural production, and the use of microorganisms for the production of drugs and other complex molecules.

Computer and Telecommunications

This field covers technological advances affecting both computers and telecommunications hardware products. The primary advances in this field are in developing hardware that can process information more quickly. Important breakthroughs are expected in the areas of artificial intelligence and parallel processing.

Computer Integrated Manufacturing

This field includes developments in robotics and numerically controlled (NC) machines. These products have a significant impact on industrial automation. Robots and NC machines perform increasingly sophisticated operations through developments in sensory and visual capabilities of machines. With these breakthroughs, the manufacturing processes have increased in flexibility and require less human intervention to operate and maintain production machinery. Many of the new automation technologies are made possible because of breakthroughs in the application and development of faster, smaller components.

Electronics

The miniaturization of electronic components is the most important recent technological advance in the field of electronics. Some technologies included are integrated circuits, semiconductors, such as transistors and diodes, as well as new developments in surface mounting of electronic components such as capacitors and resistors.

Life Sciences (Medical)

This field encompasses the application of scientific advances to medical sciences. Recent advances such as nuclear resonance imaging, echocardio-graphs, and total-patient monitoring systems are examples of products developed from recent technological advances in this field. Also, recent increases in the strength of materials and reductions in their weight have led to improved internally implemented fixation devices and prostheses.

Materials Design

Materials design includes the newest methods of production for products that already exist in the market as well as the development of new products. Recent examples of technological advancements include high temperature superconductors, advanced polymers that expand the areas of plastic use, and new ultra clear glass that allows fibre optic cable to be used for long distance communication.

Nuclear Technology

This field covers developments in nuclear power production and primary nuclear reactors. It includes newly designed reactor components that improve the safety and efficiency of nuclear power plants. It also includes developments in the creation and packag-

ing of nuclear fuel, the application of atomic physics to medical and other areas of science.

Opto-Electronics

Opto-electronics is generally defined as the expanded development and application of the laser. Also included are recent advances in photoelectric cells and diodes, photographic and other imaging equipment, and fiber-optic cables.

Weapons

This field covers all advanced methods used for the development, guidance, and control of weapons intended for national or personal protection and deterrence. Many of the developments in this area are the result of breakthroughs in computers and telecommunications as well as aerospace technologies.